



NOAA Technical Memorandum NMFS-AFSC-424

# Human-Caused Mortality and Injury of NMFS-managed Alaska Marine Mammal Stocks, 2015-2019

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K. M. Savage, S. S. Teerlink, L. A. Jemison, K. M. Wilkinson,  
and J. E. Jannot

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National Oceanic and Atmospheric  
Administration  
National Marine Fisheries Service  
Alaska Fisheries Science Center

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# Human-Caused Mortality and Injury of NMFS-managed Alaska Marine Mammal Stocks, 2015-2019

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## U.S. DEPARTMENT OF COMMERCE

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## Abstract

Section 117 of the Marine Mammal Protection Act (MMPA) requires the National Marine Fisheries Service (NMFS) to estimate human-caused marine mammal mortality and serious injury. Data from documented interactions between human activities and pinnipeds or cetaceans belonging to stocks which appear in the Alaska Marine Mammal Stock Assessment Reports (SARs) were compiled for the 5-year period from 2015 through 2019. A total of 934 unique interactions with evidence of human-caused mortality or injury are summarized in this report. Details for all reported human-marine mammal interactions (approximately 3,500) were first assessed for evidence of human-caused injury or mortality of the marine mammal; injuries and mortalities that could not be attributed with high confidence to human causes were excluded from further analysis. Injury severity determinations were then made for those injuries considered with high confidence to be human-caused. Injury determination details, including the injury cause, type, severity (non-serious, serious, or prorated serious), and criteria supporting the determination are presented in Appendix Table 1.1. Records of human-caused mortality, assigned to cause, are also included in this report and presented in Appendix Table 1.1. Mortality or injury values were assigned to each interaction for comparison with the potential biological removal (PBR) levels, calculated under the MMPA, for each stock in the Alaska SARs. The mortality and injury values included in this report are derived solely from documented interactions. Not all human-caused mortality and injury of marine mammals is documented so this report represents a minimum count of human-caused mortality and injury of Alaska marine mammal stocks.



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## Introduction

The Marine Mammal Protection Act (MMPA, 1972) requires the National Oceanic and Atmospheric Administration (NOAA), National Marine Fisheries Service (NMFS) to estimate the annual human-caused mortality and serious injury of marine mammal stocks by cause (MMPA, section 117) and to classify commercial fisheries based on each fishery's rate of incidental mortality and serious injury of marine mammals (MMPA, section 118). NMFS evaluates the annual level of known or estimated human-caused mortality and serious injury for each stock from all human causes, including specific commercial fishing operations, relative to the potential biological removal (PBR) levels calculated under the MMPA (Wade 1998). Mortality and serious injury events are assigned to cause and estimates of annual mortality and serious injury are calculated by cause. Assessing the severity of an injury and likelihood that an injury will result in mortality requires information about the biology of the animal, the type and severity of the injury, and the injury cause. Thorough examination of human-caused injuries of marine mammals is often not possible because these events often occur in extremely remote areas of Alaska and observed injuries are often not documented in sufficient detail to understand the level of injury severity.

A serious injury is defined in regulations as “any injury that will likely result in mortality” (50 CFR 229.2). To accurately and consistently estimate the number of serious injuries occurring in each stock, NMFS clarified its definition of “serious injury” (SI) in 2012 and stated its interpretation of the regulatory definition of serious injury as any injury that is “more likely than not” to result in mortality or any injury that presents a greater than 50% chance of death to the marine mammal (77 Federal Register 3233, 23 January 2012; NMFS 2012a). NMFS also established a consistent and transparent process for distinguishing non-serious injuries (NSI) from SI and for documenting pertinent information considered in making injury determinations (NMFS 2012a, b). Substantial information is known about the likely outcomes of particular injuries of large whales due to the analysis of historical large whale injuries with known outcomes. This allows NMFS to better estimate, or prorate, the chance that a particular injury is likely to result in mortality. For example, at the time NMFS established its injury determination criteria, there were 25 records with known outcomes involving large whales that sustained ship-strike lacerations of unknown severity, and in 13 of these instances (52%) the result was a decline in health status or death of the animal. These data are then used to inform decision-making in situations where the severity of the laceration (superficial vs. deep) is unknown. The rate of serious injury for this category is prorated by multiplying the number of events assigned to this criterion by 0.52 (NMFS 2012b).

This report consists of records from 2015 through 2019 that were assessed for human-caused mortality or injury of cetaceans and pinnipeds occurring in Alaska and U.S. West Coast waters and assessed within the Alaska Marine Mammal Stock Assessment Reports (SARs). For marine mammal stocks that are found injured or dead in Alaska water but assessed in the U.S. Pacific Marine Mammal SARs, the records are sent to the NMFS Southwest Fisheries Science Center (SWFSC) for inclusion in the report summarizing mortality and injury for U.S. Pacific West Coast marine mammal stocks (e.g., Carretta et al. 2021). Examples of stocks assessed in the U.S. Pacific SARs that range into Alaska waters include the Eastern North Pacific gray whale and the California breeding stock of northern elephant seals, whereas, some stocks which range as far south as California, such as Eastern U.S. Steller sea lions and Eastern Pacific northern fur seals, are reported in the Alaska SARs. Similarly, for marine mammals under the jurisdiction of the U.S. Fish and Wildlife Service (USFWS) that are found injured or dead in Alaska waters, such as Pacific walruses and northern sea otters, records and any resulting bycatch estimates are sent to the USFWS for inclusion in those stocks' assessment reports. Mortality and injury data may be reported by marine mammal stranding networks, research programs, fisheries observer programs, fishermen, and disentanglement networks. Mortality and injury of marine mammals resulting from the Alaska Native subsistence harvest are not reported in this document, except in rare circumstances, but these data are reported in the Alaska SARs. Mortality and serious injury data from 2015 through 2019 were summarized by stock, cause, and year and used for estimates reported in the 2021 Alaska SARs (Muto et al. in review); in most cases, non-serious injuries are not reported in the SARs. All information pertinent to decisions of NSI, SI, or prorated SI is presented in this report.

## **Methods**

Data were acquired primarily from databases and archives maintained by the NMFS Alaska Regional Office (AKRO) marine mammal stranding network, the NMFS Alaska Fisheries Science Center (AFSC) Fisheries Monitoring and Analysis Division's North Pacific Observer Program, the NMFS West Coast Regional Office (WCRO) marine mammal stranding network, the NMFS Northwest Fisheries Science Center (NWFSC) Fishery Resource Analysis and Monitoring Division, Fisheries Observation Science Program (which encompasses both the West Coast Groundfish Observer Program (WCGOP) and the At-Sea Hake Observer Program (A-SHOP)), the NMFS SWFSC, the Marine Mammal Authorization Program (MMAP), the NMFS Office of Protected Resources (OPR), and the Alaska Department of Fish and Game (ADF&G). In the course of reviewing 5 years of human-marine mammal interaction data, an injury determination team at the AFSC's Marine Mammal Laboratory

(MML) reviewed approximately 3,500 records for evidence of human-caused mortality or injury of the marine mammal(s) involved in the interaction. All available documentation (reports, emails, images, resight information, and necropsy results) was considered to assess interactions, make injury determinations, and attribute mortality and injury to a cause. If more information was necessary for a determination, the primary source of information was contacted.

Any interaction which met an injury category criterion in NMFS Instruction 02-038-01 (NMFS 2012b; e.g., ingested gear or hook(s), entanglements, ship strikes, lacerations, etc.) was considered to potentially document a human-caused injury, and a summary of all relevant information was recorded as a unique entry in a Microsoft Access database. Any mortality which the MML injury determination team was able to assign with high confidence to a human cause was also summarized and recorded as a unique entry in the database. When multiple records documenting a single instance of human-caused mortality or injury were identified, the relevant information from each record was consolidated into a single entry within the database. The database allowed MML staff to quickly sort and summarize a large number of entries. Primary records, such as Level-A forms, necropsy reports, and imagery, were retained for reference. Follow-up information for a previously documented event, such as additional sightings or reports of a decline in health condition, was added to the existing database entry. When a dependent calf or pup of an injured or dead animal was observed, a separate database entry was added and the offspring was assessed as a unique, but associated, event. Interaction records in which there was no potential for human-caused injury of the marine mammal, such as reports of animals feeding on fishery discards or interactions that lacked sufficient information to assign an injury to a human cause, were retained for reference but excluded from the database and report.

Following the initial review of approximately 3,500 primary records of human-marine mammal interactions, 934 unique cases of human-caused mortality or injury of marine mammals were identified. Each of these was evaluated using NMFS' injury determination criteria (NMFS 2012b). Different sets of criteria, specific to large cetaceans (mysticetes and sperm whales), small cetaceans (all odontocetes except sperm whales), and pinnipeds, were used to evaluate each injury event and assign it to the most appropriate injury category (NMFS 2012b; Appendix Tables 2.1-2.3). Some interactions fit more than one injury category. In these cases, the most severe injury category was used to determine whether an injury should be considered serious, non-serious, or prorated.

An initial and final injury determination was made for each record included in this report. The initial and final determinations were the same for events in which the animal was dead when first observed or was observed for a brief period of time. Initial and final determinations could differ if an animal was determined to be seriously injured but, over

time and through human intervention, its condition improved. Examples of situations where initial and final determinations could differ include events where disentanglement teams successfully removed gear from a seriously injured entangled whale (assuming there was no evidence of health decline or other injury) and events where stranded pinniped pups were rehabilitated and released. In these cases, the final injury determination would be reported in the SAR for comparison to PBR, while the initial injury determination would be used for commercial fisheries-related interactions to classify fisheries in the MMPA List of Fisheries (LOF).

Initial and final injury determinations do not differ in situations where commercial fishermen, or others, release animals from gear in real-time (i.e., at the time of the interaction). In these situations, the injury determination is made after the animal is released from the gear and this determination is used when classifying fisheries for the MMPA LOF and for comparison to PBR (NMFS 2012a). For example, if a humpback whale became entangled in an active commercial gillnet, was released by fishermen at the time of the interaction, and swam away free of gear without any sign of injury, the initial and final determinations would be NSI and the same injury determination would be compared to PBR and used in the MMPA LOF. In contrast, if a humpback whale became entangled in an active commercial gillnet and broke free with a portion of gillnet forming a constricting entanglement, it would initially be considered a serious injury. However, if an experienced disentanglement team removed all gear from the animal, and there was no other sign of serious injury, the final determination compared to PBR would be NSI. This injury would not be counted in the mortality and serious injury estimates reported in the SARs since the human intervention activities mitigated the serious injury of the animal. However, for the purposes of classifying commercial fisheries for the MMPA LOF, the whale would be considered SI and included in the tier analysis for classifying that specific commercial fishery.

Serious injury determinations and assignments to cause were discussed and agreed upon by an injury determination team at MML. When necessary, other experts at MML were consulted when making determinations. All determinations and assignments were then reviewed by experienced staff at other NMFS Science Centers to ensure determinations were consistent across the Science Centers. The determinations were also reviewed by the AKRO and the Alaska Scientific Review Group, an independent group established under section 117(d) of the MMPA to advise NMFS on a range of marine mammal science and management issues. The AKRO provided fishery assignments for records of fisheries-related injuries and mortalities that were not obtained from a fisheries observer program.

Occasionally, fisheries observers opportunistically report marine mammals that were incidentally killed or injured in unsampled hauls. Previously, these mortalities and injuries

were included in this report and added to the bycatch estimate for the fishery in the SARs. Going forward, these interactions will continue to be included in this report but generally will not be reported in the Alaska SARs or used to estimate bycatch, because the bycatch estimation process accounts for interactions in unsampled hauls. The exception is if no mortality or serious injury (M/SI) of a stock was observed in sampled hauls in a particular fishery in a particular year; in this case, M/SI in unsampled hauls is provided in the SAR as a minimum estimate of bycatch of that stock for that fishery for that year. To assist the reader in comparing interaction data between this report and the SAR, interactions in unsampled hauls are specifically noted in the Determination Details column of Appendix Table 1.1.

Alaska Native subsistence harvest information is generally not included in this report but is reported in the Alaska SARs. However, during the time period covered by this report, three bowhead whales and four beluga whales discovered entangled in fishing gear were subsequently harvested for Alaska Native subsistence use. These animals were included in the table of human-marine mammal interaction records reviewed for injury and mortality (Appendix Table 1.1). In previous iterations of this report (e.g., Young et al. 2020), these types of interactions were counted as Alaska Native subsistence takes and were not assigned values for comparison against PBR or for use in classifying fisheries on the MMPA LOF (i.e., "N/A" was entered in the Suggested Value for PBR and Suggested Value for LOF fields). In contrast, in this report and future reports, these interactions will be assigned values for comparison against PBR and for use in classifying fisheries on the MMPA LOF, if applicable, to reflect the true impact of commercial fisheries on marine mammal stocks.

Pinnipeds with gunshot wounds reported to the NMFS AKRO marine mammal stranding network were assumed to be struck and lost animals associated with the Alaska Native subsistence hunt unless there was information which indicated the animals were illegally shot. These struck and lost animals (28 of the 58 confirmed reports of pinnipeds with gunshot wounds reported to the NMFS AKRO stranding network from 2015 to 2019) were not included in this report or in the SARs to avoid double-counting animals that were already included (as struck and lost) in the Alaska Native subsistence harvest data. In contrast, pinnipeds with gunshot wounds reported to the NMFS WCRO marine mammal stranding network, such as Eastern U.S. Steller sea lions in Washington, Oregon, or California were assumed to have been illegally shot and were included in this report.

From 2015 to 2019, NMFS received 204 MMAP fishermen self-reports documenting mortality and injury of 229 marine mammals in Alaska waters. In addition, NMFS received 31 MMAP fishermen self-reports documenting mortality and injury of 40 marine mammals in waters off the U.S. West Coast from stocks that are assessed in the Alaska SARs (i.e., Eastern Pacific northern fur seals in December-May and Eastern U.S. Steller sea lions).

Approximately 97% of the self-reports are not included in this report for one or more of the following reasons: (a) the reported species is under the jurisdiction of the USFWS (so data were sent to the USFWS); (b) the reported species is included in the Pacific SARs, not the Alaska SARs (so data were sent to the NMFS SWFSC); (c) the animal was previously dead, e.g., had signs of decomposition; (d) the animal was taken in a currently observed fishery (regardless of whether that specific interaction was actually observed) and, thus, is already accounted for in the total bycatch estimates derived from observer data that are presented in the SARs;<sup>1</sup> (e) the animal was taken in a fishery for which other sources of data (e.g., previous observer data) are used to estimate bycatch; or (f) the interaction was also reported to the NMFS AKRO stranding network, usually with more details and, thus, is already accounted for in this report.

## Results

### *Overall*

Of the 934 human-marine mammal interactions summarized in this report, 797 interactions were determined to have caused a mortality, SI, removal from the population, or were prorated to reflect the likelihood of serious injury of the marine mammal involved in the interaction. The remaining 137 interactions were found to have resulted in an NSI of the marine mammal.

Across all 934 interactions, entanglement/entrapment<sup>2</sup> was the most common mechanism of injury (n = 657), 534 of which resulted in SI, prorated SI, or mortality (collectively referred to as mortality and serious injury, or M/SI). The majority of these entanglement/entrapment-related interactions occurred in fishing gear (n = 414 interactions, resulting in 327 M/SI) and marine debris (n = 236, resulting in 193.75 M/SI); other causes of entanglement/entrapment (n = 7 interactions, resulting in 2.5 M/SI) included an outhaul mooring, loose webbing at a remote ADF&G king salmon release site, vessel ground tackle, anchored line used for mooring docks, and MMPA-authorized research and management activities at Bonneville Dam. An additional 256 confirmed interactions included animals that were hooked by fishing gear (n = 156 interactions, resulting in 147 M/SI), illegally

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<sup>1</sup> Similar to the procedure described for documenting interactions in unsampled hauls, MMAP reports from currently observed fisheries were included in this report if there were no observed mortalities or injuries of that species and stock in the fishery that year (i.e., the MMAP report represented the only source of information on mortalities or injuries of that species and stock in that fishery in that year).

<sup>2</sup> When considering the statistics presented in this report, “entanglement/entrapment” or “entanglement” also includes “constricting entanglements,” unless specifically distinguished.

shot (n = 67, resulting in 67 M/SI), or struck by ships (n = 33, resulting in 20.1 M/SI); the remaining 21 interactions were due to other assorted causes, resulting in 20.5 M/SI.

Of the 353 interaction records that were provided by the AKRO and WCRO stranding networks, 282 documented M/SI of the animal involved in the interaction, resulting in 264.08 M/SI. The M/SI in these records was due to entanglement in marine debris (n = 71 interactions, resulting in 68.75 M/SI), illegal shooting (n = 64, resulting in 64 M/SI), entanglement in fishing gear (n = 69, resulting in 61.75 M/SI), hooking in fishing gear (n = 44, resulting in 44 M/SI), ship strike (n = 26, resulting in 18.58 M/SI), and other assorted causes (n = 8, resulting in 7 M/SI).

Fisheries observers in the North Pacific Groundfish Observer Program, West Coast Groundfish Observer Program, and At-Sea Hake Observer Program reported 321 interaction events in federal groundfish fisheries. The majority of these events resulted in mortality (n = 258 interactions, resulting in 258 M/SI), with 53 NSI and a relatively small number of SI and prorated SI (n = 10, resulting in 8.77 M/SI), resulting in a total of 266.77 M/SI.

Approximately 600 observations of Steller sea lion entanglements and fishing gear interactions, many of which were repeat sightings of individual animals, were documented and reviewed by ADF&G based on standardized annual summer surveys conducted at most Steller sea lion haulouts and rookeries in Southeast Alaska, Prince William Sound, the Barren Islands, and Bristol Bay. From these observations, 234 injured Steller sea lions were determined to be unique animals, resulting in 222 M/SI. Among these records, entanglement/entrapment in fishing gear and marine debris (n = 130 interactions, resulting in 124 M/SI) and hooking and/or fishing gear ingestion (n = 97, resulting in 91 M/SI) were most prevalent; the remainder (n = 7 interactions, resulting in 7 M/SI) were dependent pups with seriously injured mothers.

### ***Pinnipeds***

Steller sea lions were the most common species in reports of human-caused mortality and injury between 2015 and 2019 (n = 594 interactions, resulting in 539 M/SI). The most common cause of mortality and injury for the Eastern U.S. stock of Steller sea lions (n = 446, resulting in 395 M/SI) was entanglement (n = 253, resulting in 209 M/SI), which occurred in marine debris (n = 138, resulting in 131 M/SI), in fishing gear (n = 114, resulting in 77 M/SI, of which 101 interactions resulting in 66 M/SI were in commercial trawl gear), and during MMPA-authorized research and management activities at the Bonneville Dam (n = 1, resulting in 1 M/SI). The second most common cause of mortality and injury for the Eastern U.S. stock was injuries related to being hooked by fishing gear (n = 143, resulting in 136 M/SI), which primarily occurred during salmon fishing in which a

line with gear was towed behind a vessel (n = 114, resulting in 113 M/SI). Depending on salmon species, location, and fishermen preference, different types of lures are used to attract fish including spinners, spoons, and flashers. Steller sea lions that have ingested gear are found with flashers hanging from the edge of their mouth connected to monofilament line that is attached to a swallowed hook. Recreational fishermen, charter operators, and commercial trollers all tow lines with gear behind their vessel and all sometimes use flashers when fishing for salmon; Steller sea lions are known to interact with gear used by all three of these fishing groups. We have replaced the terminology “trollers” and “troll” used in previous M/SI reports with “salmon hook and line” to more accurately describe this type of salmon fishery in Alaska. We also now use the term “unknown hook and line” for interactions with similar gear (fisheries in which a line with gear is towed behind a vessel) off the West Coast when the target species is unknown, and for other instances of interactions with hooks and/or monofilament lines that cannot be identified to a fishery. Other causes of mortality and injury for the Eastern U.S. stock of Steller sea lions include shooting (n = 39, resulting in 39 M/SI), dependent animals with seriously injured mothers (n = 9, resulting in 9 M/SI), body trauma (n = 1, resulting in 1 M/SI), and ship strike (n = 1, resulting in 1 M/SI).

Based on 15 years of annual summer surveys of Steller sea lions, ADF&G documented 15 marked individual Steller sea lions that interacted with salmon hook-and-line fishing gear as evidenced by a flasher at the edge of the mouth. ADF&G has gained information on the fate of some of these animals. Seven were able to free themselves from the flasher (presumably by biting through the monofilament line that connected the swallowed hook to the flasher) and survived at least 1 year beyond the initial observation date. The flasher was not present when these seven animals were re-sighted in subsequent years. Of the eight remaining animals, one was found dead due to the flasher and swallowed hook combination, one was taken in an Alaska Native subsistence hunt (rumored to be, in part, a “mercy killing” because the animal appeared emaciated and sickly), and six were never sighted again following the initial report (ADF&G Steller Sea Lion Research Program, unpubl. data).

ADF&G analyzed data from 1,439 individually marked Steller sea lions that were re-sighted from 2001 through 2015. The analyses indicated that Steller sea lions that had ingested salmon hook and line fishing gear had lower survival than comparable animals that had not ingested fishing gear (ADF&G Steller Sea Lion Research Program, unpubl. data). Post-mortem exams of Steller sea lions with flasher entanglements typically revealed a hook lodged in the esophagus or penetrating the pleural cavity or pericardium.

Human-caused mortality and injury of the Western U.S. stock of Steller sea lions (n = 148, resulting in 144 M/SI) was primarily caused by federal groundfish trawl fisheries (n = 102,

resulting in 100 M/SI), which are observed by federal fisheries observers. These interactions typically resulted in mortality (the animal was already dead by the time it was observed); injuries are rare (Breiwick 2013). Other causes of mortality and injury were entanglements in other types of fishing gear (n = 6, resulting in 6 M/SI) and marine debris (n = 17, resulting in 17 M/SI), illegal shootings (n = 12, resulting in 12 M/SI), hooking in fishing gear (n = 8, resulting in 6 M/SI), and mortality and injury incidental to MMPA-authorized research (n = 3, resulting in 3 M/SI). Differences in the leading causes of M/SI for the Eastern U.S. and Western U.S. stocks of Steller sea lions are likely due to the geographical distribution of commercial and charter/recreational salmon hook and line fishing effort, which occurs more in Southeast Alaska than in any other part of the state. It is unknown whether differences in reported entanglement numbers for each stock are due to lower entanglement rates in the Western U.S. stock of Steller sea lions or the result of other factors, such as fewer people to notice entanglements in some of these areas, which result in fewer reports of entanglement.

The majority of human-caused mortality and injury of northern fur seals (n = 112, resulting in 67 M/SI) was due to constricting entanglements, mainly circumferential neck entanglements in marine debris and various components of fishing gear (n = 89, resulting in 50 M/SI). Because Eastern Pacific northern fur seals are known to occur off the U.S. West Coast in winter/spring, any mortality or injury reported off the coasts of Washington, Oregon, or California during December through May was assigned to both the Eastern Pacific and California stocks of northern fur seals.

Most human-caused mortality and injury of phocids involved harbor (n = 34, resulting in 33 M/SI) and ringed (n = 28, resulting in 28 M/SI) seals, with some additional records of bearded (n = 8, resulting in 8 M/SI), spotted (n = 7, resulting in 7 M/SI), and ribbon (n = 1, resulting in 1 M/SI) seals. Three unidentified phocid mortalities were also observed in federal fisheries. Of the records of phocid mortalities and injuries (n = 81, resulting in 80 M/SI), entanglement/entrapment in commercial trawl fishery gear (n = 53, resulting in 53 M/SI) was the leading cause.

Of the human-caused mortality and injury of unidentified otariids (n = 10, resulting in 4 M/SI), entanglement/entrapment in commercial trawl fishery gear was the sole cause. As for unidentified pinnipeds (n = 8, resulting in 1 M/SI), entanglement/entrapment in commercial trawl fishery gear was the main cause (n = 7, resulting in 0 M/SI).

## ***Large Cetaceans***

Human-caused mortality and injury of large cetaceans (n = 108 interactions, resulting in 66.85 M/SI<sup>3</sup>) was reported for humpback (n = 84, resulting in 46.81 M/SI), sperm (n = 7, resulting in 5.25 M/SI), fin (n = 3, resulting in 3 M/SI), bowhead (n = 4, resulting in 4 M/SI), and unidentified whales (n = 10, resulting in 7.79 M/SI). Entanglements of humpback whales (n = 58, resulting in 33.25 M/SI) comprised the majority of these interactions, followed by ship strikes of humpback whales (n = 24, resulting in 12.06 M/SI). Mortality and injury events that occurred in the area where the Western North Pacific and Central North Pacific stocks of humpback whales are known to overlap were assigned to both stocks. Sperm whale entanglements in federal longline fishing gear (n = 4) resulted in 2.25 M/SI. Sperm whales (and killer whales) are known to depredate (remove or damage) fish on longline gear during haul back, increasing their susceptibility for interaction with these fisheries (Sigler et al. 2008, Peterson and Hanselman 2017).

Many of the large whale entanglements were assigned to injury category L10 “evidence of entanglement” (Appendix Table 2.1), in which an entanglement was known to have occurred but there was insufficient information available on the configuration of the entanglement to determine whether the gear was wrapped in a constricting manner (category L2) or loosely wrapped, bridled, or draped (category L3). More details on the configuration of entanglements (such as written descriptions from observations; aerial, underwater, and surface images; or follow-up information from resights of entangled whales) are needed to improve the accuracy of injury determinations.

## ***Small Cetaceans***

There were relatively few reports of human-caused mortality or injury of Alaska stocks of small cetaceans from 2015 to 2019 (n = 21 interactions, resulting in 20 M/SI<sup>4</sup>). There were four harbor porpoise mortalities incidental to subsistence gillnet (n = 2), commercial gillnet (n = 1), and unknown net (n = 1) fisheries. One beluga whale mortality occurred incidental to MMPA-authorized research (n = 1), and four occurred incidental to subsistence gillnet (n = 1), commercial gillnet (n = 2), and unknown net (n = 1) fisheries;

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<sup>3</sup> As noted in the Methods section, animals discovered hooked or entangled in fishing gear that were subsequently harvested for Alaska Native subsistence use were included in this report’s summaries of numbers of interactions and counted in the M/SI estimates. This includes three bowhead whales. Beginning with the 2021 bowhead whale SAR, the mean annual M/SI from these three events was subtracted from the mean annual Alaska Native subsistence harvest reported in the SAR to prevent double counting.

<sup>4</sup> As noted in the Methods section, animals discovered hooked or entangled in fishing gear that were subsequently harvested for Alaska Native subsistence use were included in this report’s summaries of numbers of interactions and counted in the M/SI estimates. This includes four Eastern Bering Sea (EBS) beluga whales. Note: the three events that occurred in 2018 were included in the Alaska Native subsistence harvest reported in the 2020 EBS beluga whale SAR but were not included in the fishery-related M/SI summaries in either the 2014-2018 M/SI report (Young et al. 2020) or the 2020 SAR.

these four animals were subsequently harvested for Alaska Native subsistence use. Dall's porpoise mortality (n = 1) occurred incidental to unknown pot gear. Two Pacific white-sided dolphins were killed in federal trawl fisheries. Interactions causing mortality and injury (n = 7 interactions, resulting in 6 M/SI) of killer whales occurred in the federal groundfish trawl fisheries (n = 2, resulting in 2 M/SI, one of which was a propeller strike), federal longline fisheries (n = 2, resulting in 2 M/SI), California Dungeness crab pot fishery (n = 2, resulting in 1 M/SI), and an unknown pot fishery (n = 1, resulting in 1 M/SI). When ecotype and/or stock was unknown, the injury or mortality was assigned to killer whale stocks that could occur in the area. One of the killer whales entangled in California Dungeness crab pot gear, was found stranded in northern California and was included in this report because genetic analysis indicated it was a transient killer whale. However, because the stock could not be identified, this mortality was assigned to the Eastern North Pacific (ENP) Gulf of Alaska, Aleutian Islands, Bering Sea Transient, and West Coast Transient killer whale stocks; it was not assigned to the AT1 Transient killer whale stock because none of the whales in that population are missing. A killer whale observed entangled in unknown pot gear in Southeast Alaska was assigned to the ENP Alaska Resident, ENP Northern Resident, and West Coast Transient killer whale stocks because the ecotype and stock were unknown. Finally, two mortalities of unidentified small cetaceans in the Alaska Cook Inlet salmon set gillnet fishery were self-reported by fishermen through the MMAP.

## **Discussion**

All records of human-caused mortality and injury of marine mammal stocks that are assessed in the Alaska SARs were obtained through dedicated efforts, such as commercial fisheries observer programs and ongoing agency research and monitoring programs, or by opportunistic reports from stranding networks, researchers, or at-sea sightings from vessel and aircraft operators. Because of the vastness and remoteness of Alaska's coastlines and the fact that not all dead or injured marine mammals wash ashore, the detection and reporting of stranded marine mammals is particularly limited in Alaska compared with other Regions. Consequently, the opportunistic reports represent minimum values for human-caused injury and mortality of marine mammals in Alaska. Actual levels of human-caused injury and mortality of Alaska pinniped and cetacean stocks are most likely greater than the values in this report.

The quality and quantity of information available for each mortality or injury record was highly variable. Some records contained a very limited amount of information, while others consisted of multiple images or videos which depicted the full nature of the injury or

captured from varying perspectives can confirm or rule out the presence of constricting wraps of line or fishing gear, reducing the number of L10 (evidence of entanglement) classifications, used when not enough information is known about the configuration of the entanglement to differentiate between L2 (SI) and L3 (NSI) entanglement injury categories. Even in the absence of imagery, records with detailed information about an incident can increase the chance of appropriately classifying the injury and properly assigning the interaction to the specific fishery involved. Without sufficient information, injuries must be classified in categories such as “evidence of entanglement” instead of more accurate injury categories. When documenting marine mammal mortality or injury, stranding responders, disentanglement teams, and fisheries observers should be encouraged to provide as many details as possible regarding entanglement configurations and to document the event with pictures and video. NMFS should also ensure that people responding to or reporting on injured marine mammals are informed of key information that needs to be recorded for NMFS to distinguish serious from non-serious injuries. For management purposes, fisheries observers and stranding network participants reporting fishery interactions should also be encouraged to include details that can aid in determining and documenting mortality and injury in specific fisheries. It is also helpful for reporters to differentiate between commercial, recreational, and subsistence fishing gear or fishery interactions, when possible. In some situations, the same type of fishing gear can be used by commercial, charter, and recreational salmon hook-and-line fishing groups (e.g., in Southeast Alaska), thus, making it difficult to definitively assign fishery gear to a user group *ad hoc*.

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## Guide to Acronyms and Abbreviations Found in Appendix 1

The following acronyms and abbreviations are used in Appendix Table 1.1.

### Areas (also used in some Fishery Names):

AK: Alaska

BS: Bering Sea

CA: California

GOA: Gulf of Alaska

OR: Oregon

PWS: Prince William Sound

SCAK: Southcentral Alaska

SEAK: Southeast Alaska

WA: Washington

WAK: Western Alaska

WC: U.S. West Coast

### Sources of Records:

ADFG: Alaska Department of Fish and Game

AKRO: National Marine Fisheries Service, Alaska Regional Office

A-SHOP: National Marine Fisheries Service, At-Sea Hake Observer Program

MMAP: Marine Mammal Authorization Program

NMFS OPR/HQ: National Marine Fisheries Service, Office of Protected  
Resources/Headquarters

NPGOP: National Marine Fisheries Service, North Pacific Groundfish Observer Program

NWFSC: National Marine Fisheries Service, Northwest Fisheries Science Center

ODFW: Oregon Department of Fish and Wildlife

Rolland et al. 2019: Rolland, R. M., K. M. Graham, R. Stimmelmayer, R. S. Suydam, and J. C. George. 2019. Chronic stress from fishing gear entanglement is recorded in baleen from a bowhead whale (*Balaena mysticetus*). Mar. Mammal Sci. 35(4): 1625-1642.

SWFSC: National Marine Fisheries Service, Southwest Fisheries Science Center

WCGOP: National Marine Fisheries Service, West Coast Groundfish Observer Program

WCRO: National Marine Fisheries Service, West Coast Regional Office

### Initial Assessment and Final Determinations:

NSI: Non-Serious Injury

SI: Serious Injury

**Other:**

ASLC: Alaska SeaLife Center

BSAI: Bering Sea/Aleutian Islands

COD: Cause of Death

EM: Electronic Monitoring

ID: Species Identity

LOF: List of Fisheries

MMPA: Marine Mammal Protection Act

OA: Open Access

OLE: NOAA's Office of Law Enforcement

USCG: United States Coast Guard

## Appendix 1

Human-caused injury and mortality records reported for NMFS-managed Alaska marine mammal stocks between 2015 and 2019 and summary figures. A guide to the acronyms and abbreviations found in the tables of Appendix 1 is included on pages 17 and 18. Note: many comments were entered verbatim from observer reports. Some terminology may be specific to a particular industry or practice (e.g., “flasher” and “hoochie” are types of lures used in salmon hook-and-line recreational/charter and commercial fisheries; “cod-end” is the narrow end of a tapered trawl net; etc.). For any questions regarding specific terminology, contact the authors for clarification.

- Appendix Table 1.1: Human-marine mammal interaction records reviewed for injury and mortality, 2015-2019.
- Appendix Figure 1.1: Total human-caused serious injury and mortality of Alaska marine mammal species appearing in the Alaska Stock Assessment Reports, 2015-2019. Some large whale injury categories are prorated (i.e., assigned a serious injury value less than one), so the sum of mortality, SI, and SI prorate values may not be a whole number. See the text of the report for more information.
- Appendix Figure 1.2: Human-caused serious injury and mortality of Alaska pinniped species by mechanism of injury, 2015-2019. Dependent animals with seriously injured mothers are included in the “other” category, regardless of the mechanism of injury of their mothers.
- Appendix Figure 1.3: Human-caused serious injury and mortality of Alaska pinniped species by general cause of injury, 2015-2019. Dependent animals with seriously injured mothers are assigned the same cause of injury as their mothers.
- Appendix Figure 1.4: Fishery-related serious injury and mortality of Alaska pinniped species (fishery gear as the cause of injury) by fishery gear type, 2015-2019.
- Appendix Figure 1.5: Human-caused serious injury and mortality of Alaska large whale species by mechanism of injury, 2015-2019. Some large whale injury categories are prorated (i.e., assigned a serious injury value less than one), so the sum of mortality, SI, and SI prorate values may not be a whole number. See the text of the report for more information.

- Appendix Figure 1.6: Human-caused serious injury and mortality of Alaska large whale species by general cause of injury, 2015-2019. Dependent animals with seriously injured mothers are assigned the same cause of injury as their mothers. Some large whale injury categories are prorated (i.e., assigned a serious injury value less than one), so the sum of mortality, SI, and SI prorate values may not be a whole number. See the text of the report for more information.
- Appendix Figure 1.7: Fishery-related serious injury and mortality (fishery gear as the cause of injury) of Alaska large whale species by fishery gear type, 2015-2019. Some large whale injury categories are prorated (i.e., assigned a serious injury value less than one), so the sum of mortality, SI, and SI prorate values may not be a whole number. See the text of the report for more information.
- Appendix Figure 1.8: Human-caused serious injury and mortality of Alaska small cetacean species by mechanism of injury, 2015-2019.
- Appendix Figure 1.9: Human-caused serious injury and mortality of Alaska small cetacean species by general cause of injury, 2015-2019.
- Appendix Figure 1.10: Fishery-related serious injury and mortality (fishery gear as the cause of injury) of Alaska small cetacean species by fishery gear type, 2015-2019.

Appendix Table 1.1 -- Human-marine mammal interaction records reviewed for injury and mortality, 2015-2019.

Source of Record	Date	Area	Common Name	Stock	Initial Assessment	Determination Details	Final Determination	Mechanism of Injury	Cause of Injury	Fishery Name <sup>1</sup>	Fishery Type	Fishery Method <sup>1</sup>	SI Criteria	Suggested Value for PBR	Suggested Value for LOF
NPGOP	5/26/2015	WAK	Bearded Seal	Alaska	DEAD	A bearded seal was caught and killed in AK BSAI flatfish trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI flatfish trawl	Commercial	Trawl	N/A	1	1
NPGOP	8/26/2015	WAK	Bearded Seal	Alaska	DEAD	A bearded seal was caught and killed in AK BSAI flatfish trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI flatfish trawl	Commercial	Trawl	N/A	1	1
NMFS OPR/HQ	9/14/2015	Arctic	Bearded Seal	Alaska	REMOVAL	A bearded seal was captured in Kotzebue Sound and removed from the population for MMPA-authorized research purposes.	REMOVAL	Removal from population	MMPA authorized research	N/A	N/A	N/A	N/A	1	0
NPGOP	5/11/2016	BS	Bearded Seal	Alaska	DEAD	A bearded seal was caught and killed in trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI flatfish trawl	Commercial	Trawl	N/A	1	1
NPGOP	8/26/2016	AK	Bearded Seal	Alaska	DEAD	A bearded seal was caught and killed in BSAI pollock trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI pollock trawl	Commercial	Trawl	N/A	1	1
NPGOP	6/2/2017	BS	Bearded Seal	Alaska	DEAD	A male bearded seal was caught and killed by AK BSAI flatfish trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI flatfish trawl	Commercial	Trawl	N/A	1	1
NPGOP	8/8/2017	BS	Bearded Seal	Alaska	DEAD	A bearded seal was caught and killed by trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI pollock trawl	Commercial	Trawl	N/A	1	1
NPGOP	5/27/2018	BS	Bearded Seal	Alaska	DEAD	A female bearded seal was caught and killed by BSAI flatfish trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI flatfish trawl	Commercial	Trawl	N/A	1	1
NMFS OPR/HQ	9/17/2016	BS	Beluga Whale	Bristol Bay	DEAD	A beluga whale died as a result of marine mammal research activities in Bristol Bay, AK.	DEAD	Research related injury	MMPA authorized research	N/A	N/A	N/A	N/A	1	0
AKRO	6/1/2018	WAK	Beluga Whale	Eastern Bering Sea	DEAD	A subadult female beluga whale was caught and killed in subsistence salmon net, and then harvested for subsistence purposes.	DEAD	Entangled / entrapped	Fishery gear	Salmon gillnet	Subsistence	Gillnet	N/A	1	0
AKRO	8/27/2018	WAK	Beluga Whale	Eastern Bering Sea	DEAD	A subadult beluga whale was caught and killed in commercial gillnet, and then harvested for subsistence purposes.	DEAD	Entangled / entrapped	Fishery gear	AK Kuskokwim, Yukon, Norton Sound, Kotzebue salmon gillnet	Commercial	Gillnet	N/A	1	1
AKRO	8/28/2018	WAK	Beluga Whale	Eastern Bering Sea	DEAD	A male calf beluga whale was caught and killed in commercial gillnet, and then harvested for subsistence purposes.	DEAD	Entangled / entrapped	Fishery gear	AK Kuskokwim, Yukon, Norton Sound, Kotzebue salmon gillnet	Commercial	Gillnet	N/A	1	1
AKRO	5/30/2019	BS	Beluga Whale	Eastern Bering Sea	DEAD	A male beluga whale calf was found entangled in an unknown net. The animal was presumed to have drowned after becoming entangled and it was harvested for subsistence use.	DEAD	Entangled / entrapped	Fishery gear	Unknown	Unknown net	Net	N/A	1	0
AKRO	7/7/2015	WAK	Bowhead Whale	Western Arctic	DEAD	A dead adult female bowhead whale was discovered on the north shore of St. Lawrence Island. The whale had a considerable length (>200 ft) of line wrapped around and trailing from its peduncle. This line was also attached to two vinyl floats. A reporting party noted that the tendons were visible at the region of the peduncle where the lines had been wrapped indicating that the whale was entangled before it died. The gear was identified as belonging to a 2012 / 2013 commercial crab pot fishery.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI crab pot	Commercial	Pot	N/A	1	1

<sup>1</sup> In the Fishery Names and Fishery Methods, we have replaced the terminology “troll” used in previous M/SI reports with “salmon hook and line” to more accurately describe this type of salmon fishery in Alaska. We also replaced “troll” with “unknown hook and line” for interactions with fisheries in which a line with gear is towed behind a vessel off the West Coast, when the target species is unknown, and for other instances of interactions with hooks and/or monofilament lines that cannot be identified to a fishery.

Appendix Table 1.1 -- Human-marine mammal interaction records reviewed for injury and mortality, 2015-2019.

Rolland et al. 2019	5/5/2017	Arctic	Bowhead Whale	Western Arctic	SI	An entangled bowhead whale was harvested for subsistence use. The hunters described the whale as lethargic and trailing rope, and assumed it had been previously struck and lost. Once the whale was killed and landed, the hunters discovered the whale had severe rope entanglement wounds, with 100-200 m of 19-mm diameter rope attached to the whale. The rope was tightly anchored to the baleen, wrapped once around the left pectoral flipper, and wrapped tightly six times around the peduncle, where it penetrated approximately 10 cm through the skin into the blubber. The gear was not marked so could not be assigned to a specific fishery, but the rope characteristics were consistent with those used in Bering Sea pot fisheries.	SI	Entangled / entrapped	Fishery gear	Unconfirmed	Unknown	Pot	L2	1	0
AKRO	5/6/2017	Arctic	Bowhead Whale	Western Arctic	SI	A subadult bowhead whale was observed to be entangled in 100 - 200 meters of 3/4 inch synthetic line. The line went laterally through the mouth of the whale and was tightly fixed through the baleen rack, went caudally with a single wrap to the left pectoral fin, and then made six tight wraps around the peduncle. Hundreds of feet of line trailed behind the whale's flukes/peduncle. The line had cut 10 cm into the peduncle. There was white scar tissue associated with the peduncle injury. The whale's tongue was severely injured. The whale was harvested for subsistence immediately following its discovery. Based on the hunter's observations and an evaluation by the onsite veterinarian, this whale was in the process of dying prior to the harvest. The entanglement gear is suggested to be from the commercial Bering Sea pot fishery, but this is unconfirmed.	SI	Constricting entanglement	Fishery gear	Unconfirmed	Unknown	Pot	L2	1	0
AKRO	5/15/2017	Arctic	Bowhead Whale	Western Arctic	SI	A bowhead whale was observed to be entangled in 3/4 inch synthetic line. The entanglement involved considerable wraps through the mouth and around the neck and left pectoral fin. The tongue was badly injured with scar tissue and puffy white patches. Following its discovery, the whale was immediately harvested by Inupiat hunters in part because the whale was clearly "injured and suffering." The entanglement gear is suggested to be from the commercial Bering Sea pot fishery, but this is unconfirmed.	SI	Constricting entanglement	Fishery gear	Unconfirmed	Unknown	Pot	L2	1	0
MMAP	3/29/2019	WAK	Dall's Porpoise	Alaska	DEAD	A Dall's porpoise was found caught and killed in unknown pot gear that was brought to the surface by a bottom trawl. This case is attributed to an unknown pot fishery and not the bottom trawl fishery.	DEAD	Entangled / entrapped	Fishery gear	Unknown pot	Unknown	Pot	N/A	1	0
AKRO	5/29/2016	SEAK	Fin Whale	Northeast Pacific	DEAD	A freshly dead fin whale carcass was discovered on the bulbous bow of a cruise ship. The carcass was removed, a necropsy was conducted, and it was confirmed that the whale was killed by ship strike.	DEAD	Ship strike	Vessel (commercial)	N/A	N/A	N/A	N/A	1	0

Appendix Table 1.1 -- Human-marine mammal interaction records reviewed for injury and mortality, 2015-2019.

AKRO	6/20/2018	Kodiak	Fin Whale	Northeast Pacific	SI	A fin whale struck a 296-foot Alaskan state ferry that was traveling at 14 knots. The whale approached the vessel at 90 degrees mid-ship, "breached," and landed on the starboard stabilization fin of the ship. The captain immediately reduced the speed and maneuvered the ship to allow the whale to slide off the stabilization fin. The animal was observed for a brief time at the surface to be "bloated" and likely agonal, and then sank. The captain circled the vessel back to the position where the whale was last seen, and no further signs of the whale were detected. Damage to the vessel was reported.	SI	Ship strike	Vessel (commercial)	N/A	N/A	N/A	L6a	1	0
MMAP	9/27/2019	BS	Fin Whale	Northeast Pacific	DEAD	A fin whale was caught and killed in AK BSAI pollock trawl net.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI pollock trawl	Commercial	Trawl	N/A	1	1
AKRO	8/5/2018	WAK	Harbor Porpoise	Bering Sea	DEAD	An adult harbor porpoise was caught and killed in subsistence gillnet.	DEAD	Entangled / entrapped	Fishery gear	Salmon gillnet	Subsistence	Gillnet	N/A	1	0
AKRO	8/20/2018	WAK	Harbor Porpoise	Bering Sea	DEAD	An adult harbor porpoise was caught and killed in subsistence gillnet.	DEAD	Entangled / entrapped	Fishery gear	Salmon gillnet	Subsistence	Gillnet	N/A	1	0
MMAP	7/8/2018	Kodiak	Harbor porpoise	Gulf of Alaska	DEAD	A previously dead harbor porpoise was found in a trawl net. The animal was not entangled in the trawl gear, but had net entanglement scars on its tail from an unknown source.	DEAD	Entangled / entrapped	Fishery gear	Unknown net	Unknown	Net	N/A	1	0
MMAP	5/28/2019	SEAK	Harbor Porpoise	Southeast Alaska	DEAD	A harbor porpoise was caught and killed in a SEAK salmon cost recovery drift gillnet.	DEAD	Entangled / entrapped	Fishery gear	SEAK salmon cost recovery drift gillnet	Commercial	Gillnet	N/A	1	0
NPGOP	9/7/2016	BS	Harbor Seal	Aleutian Islands	DEAD	A harbor seal was caught and killed in trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI Atka mackerel trawl	Commercial	Trawl	N/A	1	1
NPGOP	9/9/2018	SCAK	Harbor Seal	Aleutian Islands	DEAD	A male harbor seal was caught and killed by BSAI Atka mackerel trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI Atka mackerel trawl	Commercial	Trawl	N/A	1	1
AKRO	6/28/2016	BS	Harbor Seal	Bristol Bay	DEAD	Six harbor seals were reported dead by Alaska State Troopers on the northern shore of Egegik Bay. All animals were reported to be shot in the head. This record represents animal 1 of 6.	DEAD	Shot	Projectile weapon	N/A	N/A	N/A	N/A	1	0
AKRO	6/28/2016	BS	Harbor Seal	Bristol Bay	DEAD	Six harbor seals were reported dead by Alaska State Troopers on the northern shore of Egegik Bay. All animals were reported to be shot in the head. This record represents animal 2 of 6.	DEAD	Shot	Projectile weapon	N/A	N/A	N/A	N/A	1	0
AKRO	6/28/2016	BS	Harbor Seal	Bristol Bay	DEAD	Six harbor seals were reported dead by Alaska State Troopers on the northern shore of Egegik Bay. All animals were reported to be shot in the head. This record represents animal 3 of 6.	DEAD	Shot	Projectile weapon	N/A	N/A	N/A	N/A	1	0
AKRO	6/28/2016	BS	Harbor Seal	Bristol Bay	DEAD	Six harbor seals were reported dead by Alaska State Troopers on the northern shore of Egegik Bay. All animals were reported to be shot in the head. This record represents animal 4 of 6.	DEAD	Shot	Projectile weapon	N/A	N/A	N/A	N/A	1	0
AKRO	6/28/2016	BS	Harbor Seal	Bristol Bay	DEAD	Six harbor seals were reported dead by Alaska State Troopers on the northern shore of Egegik Bay. All animals were reported to be shot in the head. This record represents animal 5 of 6.	DEAD	Shot	Projectile weapon	N/A	N/A	N/A	N/A	1	0
AKRO	6/28/2016	BS	Harbor Seal	Bristol Bay	DEAD	Six harbor seals were reported dead by Alaska State Troopers on the northern shore of Egegik Bay. All animals were reported to be shot in the head. This record represents animal 6 of 6.	DEAD	Shot	Projectile weapon	N/A	N/A	N/A	N/A	1	0

Appendix Table 1.1 -- Human-marine mammal interaction records reviewed for injury and mortality, 2015-2019.

NPGOP	2/25/2017	BS	Harbor Seal	Bristol Bay	DEAD	A harbor seal was caught and killed by AK BSAI flatfish trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI flatfish trawl	Commercial	Trawl	N/A	1	1
NPGOP	9/26/2017	BS	Harbor Seal	Bristol Bay	DEAD	A female harbor seal was caught and killed by AK BSAI flatfish trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI flatfish trawl	Commercial	Trawl	N/A	1	1
NPGOP	10/13/2017	BS	Harbor Seal	Bristol Bay	DEAD	A female harbor seal was caught and killed by AK BSAI flatfish trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI flatfish trawl	Commercial	Trawl	N/A	1	1
MMAF	6/28/2019	WAK	Harbor Seal	Bristol Bay	DEAD	A harbor seal was caught and killed in a Bristol Bay salmon set gillnet.	DEAD	Entangled / entrapped	Fishery gear	AK Bristol Bay salmon set gillnet	Commercial	Gillnet	N/A	1	1
NPGOP	9/2/2019	BS	Harbor Seal	Bristol Bay	DEAD	A male harbor seal was caught and killed by AK BSAI flatfish trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI flatfish trawl	Commercial	Trawl	N/A	1	1
NPGOP	9/14/2019	BS	Harbor Seal	Bristol Bay	DEAD	A male harbor seal was caught and killed by AK BSAI flatfish trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI flatfish trawl	Commercial	Trawl	N/A	1	1
NPGOP	5/6/2018	SEAK	Harbor Seal	Clarence Strait	DEAD	A harbor seal was caught and killed by GOA halibut longline gear.	DEAD	Hooked	Fishery gear	AK GOA halibut longline	Commercial	Longline	N/A	1	1
NPGOP	8/15/2015	GOA	Harbor Seal	Cook Inlet/Sheikof	DEAD	A harbor seal was caught and killed by AK GOA halibut longline gear.	DEAD	Hooked	Fishery gear	AK GOA halibut longline	Commercial	Longline	N/A	1	1
AKRO	7/5/2017	SCAK	Harbor Seal	Cook Inlet/Sheikof	SI	An adult seal was observed hauled out with fishing net wrapped around its rear flippers. The seal was also observed to have something around its head and neck.	SI	Constricting entanglement	Fishery gear	Unknown net	Unknown	Net	P6	1	0
NPGOP	10/12/2017	Kodiak	Harbor Seal	Cook Inlet/Sheikof	DEAD	An adult female harbor seal was caught and killed by AK GOA flatfish trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK GOA flatfish trawl	Commercial	Trawl	N/A	1	1
NPGOP	11/6/2017	Kodiak	Harbor Seal	Cook Inlet/Sheikof	DEAD	A female harbor seal was caught and killed by AK GOA flatfish trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK GOA flatfish trawl	Commercial	Trawl	N/A	1	1
AKRO	6/6/2018	SCAK	Harbor Seal	Cook Inlet/Sheikof	DEAD	A harbor seal pup was found dead of a gunshot wound. An OLE investigation concluded that the shooting was intentional and non-subsistence.	DEAD	Shot	Projectile weapon	N/A	N/A	N/A	N/A	1	0
NPGOP	6/9/2018	SCAK	Harbor Seal	Cook Inlet/Sheikof	DEAD	A harbor seal was caught and killed by GOA Pacific cod longline gear.	DEAD	Hooked	Fishery gear	AK GOA Pacific cod longline	Commercial	Longline	N/A	1	1
AKRO	6/23/2018	SCAK	Harbor Seal	Cook Inlet/Sheikof	DEAD	A harbor seal was found dead of a gunshot wound. An OLE investigation concluded that the shooting was intentional and non-subsistence.	DEAD	Shot	Projectile weapon	N/A	N/A	N/A	N/A	1	0
AKRO	7/4/2017	SEAK	Harbor Seal	Lynn Canal/Stephens	NSI	An adult harbor seal entangled in gillnet for approximately one hour was brought aboard, disentangled, and released to the water without any apparent injuries.	NSI	Entangled / entrapped	Fishery gear	AK SEAK salmon drift gillnet	Commercial	Gillnet	P4	0	0
NPGOP	10/30/2017	Kodiak	Harbor Seal	North Kodiak	DEAD	A male harbor seal was caught and killed by AK GOA flatfish trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK GOA flatfish trawl	Commercial	Trawl	N/A	1	1
AKRO	6/26/2018	Kodiak	Harbor Seal	North Kodiak	DEAD	A harbor seal was found dead in a barrier net of a salmon hatchery cost recovery seine.	DEAD	Entangled / entrapped	Fishery gear	Salmon hatchery cost recovery seine	Commercial	Seine	N/A	1	0
AKRO	7/27/2015	SCAK	Harbor Seal	Prince William Sound	DEAD	This is one of many marine mammal carcasses examined on the Copper River Delta. A dead harbor seal that appeared to be shot was discovered. The carcass had a fractured skull associated with what appeared to be a bullet entry / exit wound.	DEAD	Shot	Projectile weapon	N/A	N/A	N/A	N/A	1	0
AKRO	7/19/2016	SCAK	Harbor Seal	Prince William Sound	DEAD	A harbor seal carcass was discovered during Copper River Delta carcass surveys. Multiple round full-thickness lesions ranging from 1 cm to 2 cm in size were located throughout the head and body.	DEAD	Shot	Projectile weapon	N/A	N/A	N/A	N/A	1	0

Appendix Table 1.1 -- Human-marine mammal interaction records reviewed for injury and mortality, 2015-2019.

AKRO	7/19/2016	SCAK	Harbor Seal	Prince William Sound	DEAD	A harbor seal carcass was discovered during Copper River Delta carcass surveys. The bones of the head and neck were disorganized and there were several dorsal openings into the body cavity suggesting a gunshot COD.	DEAD	Shot	Projectile weapon	N/A	N/A	N/A	N/A	1	0
AKRO	7/19/2016	SCAK	Harbor Seal	Prince William Sound	DEAD	A harbor seal carcass was discovered during Copper River Delta carcass surveys. A fractured skull indicated the animal had been shot.	DEAD	Shot	Projectile weapon	N/A	N/A	N/A	N/A	1	0
AKRO	7/12/2017	SCAK	Harbor Seal	Prince William Sound	DEAD	An adult male harbor seal was found dead with lesions consistent with a firearm injury. A necropsy was conducted and concluded a likely gunshot to the head. Besides the trauma to the head, the rest of the hide and body appeared uninjured. Expert opinion was used to determine gunshot source.	DEAD	Shot	Projectile weapon	N/A	N/A	N/A	N/A	1	0
AKRO	7/26/2017	SCAK	Harbor Seal	Prince William Sound	DEAD	A subadult male harbor seal was found dead with lesions consistent with a firearm injury. There was a full thickness lesion on the right dorsal neck with subcutaneous bruising/hemorrhage. The head was removed for radiographs which showed a bullet and fragments in/near the atlas.	DEAD	Shot	Projectile weapon	N/A	N/A	N/A	N/A	1	0
AKRO	7/26/2017	SCAK	Harbor Seal	Prince William Sound	DEAD	A subadult male harbor seal was found dead with lesions consistent with a firearm injury. The left dorsal skull had a full thickness wound. Metal detector - negative. The head was taken for radiographs plus esophageal contents. Radiographs - top of skull with displaced fracture and possibly bullet fragments.	DEAD	Shot	Projectile weapon	N/A	N/A	N/A	N/A	1	0
AKRO	5/22/2019	SCAK	Harbor Seal	Prince William Sound	DEAD	An adult male harbor seal was found fresh dead with lesions consistent with a firearm injury. Two holes were found in the back of the skull and the metal detector signaled on the left side of the animal between the skull and the shoulder.	DEAD	Shot	Projectile weapon	N/A	N/A	N/A	N/A	1	0
NPGOP	4/5/2018	Kodiak	Harbor Seal	South Kodiak	DEAD	A harbor seal was caught and killed by GOA flatfish trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK GOA flatfish trawl	Commercial	Trawl	N/A	1	1
AKRO	2/16/2015	GOA	Humpback Whale	Central North Pacific	PRORATE	A humpback whale was observed entangled in what was identified as halibut subsistence longline gear. The whale was trailing a small anchor and large orange buoy approximately 150 ft behind it. Members of the public cut the buoy free, and reported that they thought the rest of the gear came off as well because the whale started behaving "normally." This interaction will be prorated under criterion L10 due to the unknown initial configuration of the gear, and although members of the public that cut the buoy from the whale thought the whale was free from its entanglement, this could not be confirmed.	PRORATE	Entangled / entrapped	Fishery gear	SEAK halibut longline	Subsistence	Longline	L10	0.75	0

Appendix Table 1.1 -- Human-marine mammal interaction records reviewed for injury and mortality, 2015-2019.

AKRO	5/18/2015	SCAK	Humpback Whale	Central North Pacific	PRORATE	A subadult humpback whale was reported to be severely entangled in actively fished salmon drift gillnet with most likely two wraps of gear around it. In addition, the fluke and head were also wrapped in net. The whale was reported to appear tired, but was breathing. Three boats were reported to be engaged in attempting to free the whale. A disentanglement response team was unable to respond, and the final outcome is unknown. Given the unknown final configuration of the entanglement or outcome the assignment of injury criterion L10 is appropriate.	PRORATE	Entangled / entrapped	Fishery gear	AK PWS salmon drift gillnet	Commercial	Gillnet	L10	0.75	0.75
AKRO	5/30/2015	PWS	Humpback Whale	Central North Pacific	PRORATE	A fisherman reported that a humpback whale hit his gillnet, broke through, and swam away with 40 ft of gillnet on its back. Due to a lack of specific details regarding the entanglement, this interaction qualifies as a prorated serious injury under criterion L10.	PRORATE	Entangled / entrapped	Fishery gear	AK PWS salmon drift gillnet	Commercial	Gillnet	L10	0.75	0.75
AKRO	6/2/2015	SEAK	Humpback Whale	Central North Pacific	PRORATE	An adult humpback whale was observed thrashing and entangled in gear with two orange buoys visible as part of the entanglement. A disentanglement response was initiated, but before the team could arrive the whale was observed to no longer be thrashing, and the pair of buoys was floating free. The disentanglement response team picked up the buoys and associated line, and was able to identify the fisherman the gear belonged to. The fisherman picked up the recovered gear and the remainder of the set that the lost gear originated from, and reported that no line was missing and there was only one missing sub-buoy. This interaction would have originally qualified as an entanglement under criterion L10, but due to the whale's self-release from the entanglement and recovery of all longline, the final outcome will be considered a non-serious injury.	NSI	Entangled / entrapped	Fishery gear	AK SEAK halibut longline	Commercial	Longline	L10	0	0.75
AKRO	6/28/2015	SEAK	Humpback Whale	Central North Pacific	PRORATE	A 27 ft vessel was underway at 25 knots when a group of 3-6 humpback whales surfaced immediately in front of the boat. The operator was unable to avoid hitting the whales and thinks that the boat hit 2-3 whales. There was no damage to the boat, and no observed injuries or blood in the water. The whales were reported to behave normally following the strike. This interaction qualifies as a prorated serious injury under criterion L6b. This is whale one of three.	PRORATE	Ship strike	Vessel (unknown)	N/A	N/A	N/A	L6b	0.2	0
AKRO	6/28/2015	SEAK	Humpback Whale	Central North Pacific	PRORATE	A 27 ft vessel was underway at 25 knots when a group of 3-6 humpback whales surfaced immediately in front of the boat. The operator was unable to avoid the whales, and thinks that the boat hit 2-3 whales. There was no damage to the boat, and no observed injuries or blood in the water. The whales were reported to behave normally following the strike. This interaction qualifies as a prorated serious injury under criterion L6b. This is whale two of three.	PRORATE	Ship strike	Vessel (unknown)	N/A	N/A	N/A	L6b	0.2	0

Appendix Table 1.1 -- Human-marine mammal interaction records reviewed for injury and mortality, 2015-2019.

AKRO	6/28/2015	SEAK	Humpback Whale	Central North Pacific	PRORATE	A 27 ft vessel was underway at 25 knots when a group of 3-6 humpback whales surfaced immediately in front of the boat. The operator was unable to avoid the whales, and thinks that the boat hit 2-3 whales. There was no damage to the boat, and no observed injuries or blood in the water. The whales were reported to behave normally following the strike. This interaction qualifies as a prorated serious injury under criterion L6b. This is whale three of three.	PRORATE	Ship strike	Vessel (unknown)	N/A	N/A	N/A	L6b	0.2	0
AKRO	7/1/2015	SEAK	Humpback Whale	Central North Pacific	NSI	A subadult humpback whale was observed with a small amount of gillnet caught on the tubercles and barnacles on the animal's pectoral flippers. The netting trailed only 3-4 ft. The mouth and peduncle were free from gear, and there were no wraps or connections of gear between the animal's pectoral flippers. This entanglement qualifies as a non-serious injury under criterion L3.	NSI	Entangled / entrapped	Fishery gear	AK SEAK salmon drift gillnet	Commercial	Gillnet	L3	0	0
AKRO	7/7/2015	SEAK	Humpback Whale	Central North Pacific	PRORATE	A member of the public reported that he observed a humpback whale entangled in what was described as "line across the rostrum." The whale was aggressively breaching, lob-tailing, and spiraling its body in what appeared to be an effort to free itself. The observer reported that the whale freed itself and swam off. This interaction will initially be considered a prorated serious injury based on the reported entanglement of unknown configuration and the final determination will remain a prorated serious injury under L10 as it is possible that some gear remained on the whale which the observer was unaware of.	PRORATE	Entangled / entrapped	Marine debris (rope)	N/A	N/A	N/A	L10	0.75	0
AKRO	7/17/2015	SEAK	Humpback Whale	Central North Pacific	PRORATE	A humpback whale was reported by an observer to be entangled in what appeared to be gear from a gillnet or purse seine. No mesh was observed, just line and white floats across the animal's rostrum and fluke. The whale was lunging and lob-tailing and after 20 minutes of observation reportedly freed itself from the gear and swam off. This interaction is initially prorated as a serious injury under criterion L10 due to the unknown configuration of the entanglement and the final determination will remain a prorated serious injury under L10 as the absence of any remaining gear could not be confirmed.	PRORATE	Entangled / entrapped	Fishery gear	Unknown net	Unknown	Net	L10	0.75	0
AKRO	7/26/2015	SEAK	Humpback Whale	Central North Pacific	NSI	A humpback whale was observed by cruise ship staff to be entangled in a purse seine. The observer reported that the whale appeared to be struggling to keep its head above water, and the net appeared to be weighing the whale down. During the observation a couple of fishing boats appeared to be responding to the situation. Follow up investigation with the fisherman revealed that the whale had been rolled out of the seine and "it was ok." The fisherman had previously attended whale disentanglement training. This will be considered a non-serious injury because the whale was released both alive and reportedly uninjured.	NSI	Entangled / entrapped	Fishery gear	SEAK salmon purse seine	Commercial	Seine	L2	0	0

Appendix Table 1.1 -- Human-marine mammal interaction records reviewed for injury and mortality, 2015-2019.

AKRO	7/26/2015	SEAK	Humpback Whale	Central North Pacific	NSI	A US Coast Guard Cutter's crew observed a naval vessel (>65 ft) strike a humpback whale with its bow. The vessel was travelling at 10 knots. No blood was observed in the water and the whale was not observed again. According to injury criterion L6c this interaction qualifies as a non-serious injury.	NSI	Ship strike	Vessel (government)	N/A	N/A	N/A	L6c	0	0
AKRO	7/31/2015	SEAK	Humpback Whale	Central North Pacific	PRORATE	A humpback whale with calf was observed from 7/31/2015 to 8/3/2015 with a green A3 polyball along the animal's left flank. The configuration of gear was not evident, however, the animal would not fluke. The whale was not resighted after 8/3/2015. This interaction will be considered a prorated serious injury under criterion L10 for the mother and L8 for the calf. This record represents the mother.	PRORATE	Entangled / entrapped	Fishery gear	AK SEAK crab pot or AK SEAK shrimp pot	Commercial	Pot	L10	0.75	0
AKRO	7/31/2015	SEAK	Humpback Whale	Central North Pacific	PRORATE	A humpback whale with a calf was observed entangled from 7/31/2015 to 8/3/2015, with a green A3 polyball buoy located along the animal's left flank. The configuration of gear was not evident, but the mother would not fluke indicating the possibility of additional gear that was not visible. The whales were not resighted after 8/3/2015. This interaction will be considered a prorated serious injury under criterion L10 for the mother and L8 for the calf. This record represents the calf.	PRORATE	Dependent animal with mother seriously injured	Fishery gear	AK SEAK crab pot or AK SEAK shrimp pot	Commercial	Pot	L8	0.75	0
AKRO	8/3/2015	SEAK	Humpback Whale	Central North Pacific	PRORATE	A subadult humpback whale became entangled in a purse seine and began thrashing wildly at the surface. Cuts and abrasions were apparent on the fluke and tailstock. The whale then broke free and took much of the purse seine with it. The fisherman indicated that there was as much as 600 ft of net and line trailing from the whale. This entanglement will be prorated under criterion L10 due to the unknown configuration of the entanglement.	PRORATE	Entangled / entrapped	Fishery gear	AK SEAK salmon purse seine	Commercial	Seine	L10	0.75	0.75
AKRO	8/4/2015	SEAK	Humpback Whale	Central North Pacific	PRORATE	A humpback whale was reported to have netting associated with a turquoise buoy wrapped around its body. No additional details are available, therefore this will be considered a prorated serious injury under criterion L10.	PRORATE	Entangled / entrapped	Fishery gear	Unknown net	Unknown	Net	L10	0.75	0
AKRO	8/5/2015	SEAK	Humpback Whale	Central North Pacific	SI	A large vessel (>65 ft) struck a humpback whale while underway at 16 knots. A whale was seen swimming a half mile astern of the ship following the strike, but the mate was uncertain that it was the same whale. No blood was observed in the water. This event is considered a serious injury under criterion L6a due to the vessel's size and speed.	SI	Ship strike	Vessel (government)	N/A	N/A	N/A	L6a	1	0
AKRO	8/14/2015	SEAK	Humpback Whale	Central North Pacific	PRORATE	A humpback whale mother was reported to be entangled in lead line, yellow polyline, and a green polyball buoy. Due to the limited details on the entanglement, this interaction will be considered a prorated serious injury under criterion L10 for the mother and L8 for the calf. This record represents the mother.	PRORATE	Entangled / entrapped	Fishery gear	Unknown	Unknown	Unknown	L10	0.75	0

Appendix Table 1.1 -- Human-marine mammal interaction records reviewed for injury and mortality, 2015-2019.

AKRO	8/14/2015	SEAK	Humpback Whale	Central North Pacific	PRORATE	A humpback whale mother with a calf was reported to be entangled in lead line, yellow polyline, and a green polyball buoy. Due to the limited details on the entanglement, this interaction will be considered a prorated serious injury under criterion L10 for the mother and L8 for the calf. This record represents the dependent calf.	PRORATE	Dependent animal with mother seriously injured	Fishery gear	Unknown	Unknown	Unknown	L8	0.75	0
AKRO	8/26/2015	SEAK	Humpback Whale	Central North Pacific	PRORATE	A subadult humpback whale was observed with 1/2 inch - 5/8 inch line wrapped around its tailstock. The line was reported to be neither loose nor constricting. The whale was not trailing anything, appeared robust, and was behaving similarly to the other whales. This entanglement qualifies as a serious injury under criterion L2, as the wrapped line could become constricting over time as the subadult whale continued to grow.	PRORATE	Entangled / entrapped	Marine debris (rope)	N/A	N/A	N/A	L2	1	0
AKRO	8/26/2015	SEAK	Humpback Whale	Central North Pacific	DEAD	A humpback whale carcass was spotted on 8/26/2015 at East Brothers Island and a necropsy was conducted on 9/1/2015. The necropsy revealed areas of hemorrhage, bruising, and edema on the left side of the whale's head and neck. Findings included evidence of blunt trauma, consistent with a vessel hull strike. This may be the same whale as the 8/5/2015 event.	DEAD	Ship strike	Vessel (unknown)	N/A	N/A	N/A	N/A	1	0
AKRO	9/7/2015	SEAK	Humpback Whale	Central North Pacific	PRORATE	A small (22 ft) fiberglass boat travelling at 24 knots hit a humpback whale that surfaced ahead of the boat. After the collision, the whale continued with what appeared to be normal behavior of diving, surfacing, and feeding. There were no visible injuries to the whale, and no blood in the water. The boat suffered a cracked propeller, but there was no indication of laceration injuries to the whale. This interaction is considered a prorated serious injury under criterion L6b due to the vessel's speed.	PRORATE	Ship strike	Vessel (unknown)	N/A	N/A	N/A	L6b	0.2	0
AKRO	9/7/2015	SEAK	Humpback Whale	Central North Pacific	PRORATE	An adult humpback whale was observed traveling with blue/green netting draped across its back, anterior to the dorsal fin. The reporting party thought the netting looked like gillnet gear. No buoys, line, or trailing gear was visible. The whale did not appear to be in distress. This entanglement will be considered a prorated serious injury under criterion L10 due to the unknown configuration and nature of the entanglement.	PRORATE	Entangled / entrapped	Fishery gear	AK SEAK salmon drift gillnet	Commercial	Gillnet	L10	0.75	0.75
AKRO	9/12/2015	SEAK	Humpback Whale	Central North Pacific	NSI	A whale watch vessel's bow struck a humpback whale that surfaced immediately in front of the vessel. The vessel hit the whale at 4 knots and the captain and crew watched the whale swim away and dive with no sign of injury. This interaction is considered a non-serious injury under criterion L6c due to the vessel's low rate of speed.	NSI	Ship strike	Vessel (commercial)	N/A	N/A	N/A	L6c	0	0

Appendix Table 1.1 -- Human-marine mammal interaction records reviewed for injury and mortality, 2015-2019.

AKRO	9/22/2015	GOA	Humpback Whale	Central North Pacific	PRORATE	A humpback whale was observed with an entanglement consisting of a light blue, round 1.5 ft buoy that appeared to be tight to the whale between the dorsal fin and tail. The observer noted that the float would stay on the surface between shallow dives. On deeper dives the float would submerge with the whale. This is possibly the same animal as the 8/4/2015 event based on the buoy type and entanglement configuration, but this cannot be confirmed. This entanglement will be considered a prorated serious injury under criterion L10 due to the unknown configuration and nature of the entanglement.	PRORATE	Entangled / entrapped	Fishery gear	Unknown	Unknown	Unknown	L10	0.75	0
AKRO	4/4/2016	GOA	Humpback Whale	Central North Pacific	PRORATE	A humpback whale reportedly became entangled in subsistence gillnet and broke free trailing a 5 fathom section of webbing and a basketball-sized buoy. The whale was not re-sighted. This entanglement will be considered a prorated serious injury under criterion L10 due to the unknown configuration of the entanglement.	PRORATE	Entangled / entrapped	Fishery gear	Unknown gillnet	Subsistence	Gillnet	L10	0.75	0
AKRO	5/15/2016	SEAK	Humpback Whale	Central North Pacific	PRORATE	A humpback whale was observed entangled in line and trailing a green bullet buoy about 10-15 ft behind it. The nature of the configuration could not be determined, since the observation was from a distance of more than 100 yards. This entanglement will be considered a prorated serious injury under criterion L10 due to the unknown configuration of the entanglement.	PRORATE	Entangled / entrapped	Marine debris (unidentified)	N/A	N/A	N/A	L10	0.75	0
AKRO	6/1/2016	SEAK	Humpback Whale	Central North Pacific	SI	A humpback whale became entangled in an outhaul mooring. Some gear was cut free initially, but the animal remained entangled in 150 ft of line that trailed a polyball and 60 ft of line that possibly terminated in a 100 lb anchor. Initially the entanglement appeared to originate in the mouth, and the tail and peduncle were free of gear. The whale was tracked over the next 20 days, and eventually lost the trailing polyball buoy, however, the final configuration is unclear; therefore, this entanglement is prorated under criterion L10.	PRORATE	Entangled / entrapped	Other	N/A	N/A	N/A	L10	0.75	0
AKRO	6/26/2016	SEAK	Humpback Whale	Central North Pacific	PRORATE	A humpback whale reportedly became entangled in loose webbing that hung from a remote ADF&G king salmon release site. The whale managed to free itself by the time responders arrived at the site. The whale was not resighted, and it is unknown whether any gear remained attached to the whale, therefore this entanglement is prorated under criterion L10.	PRORATE	Entangled / entrapped	Other	N/A	N/A	N/A	L10	0.75	0
AKRO	6/30/2016	SEAK	Humpback Whale	Central North Pacific	PRORATE	A humpback whale calf was reported entangled in red-colored line. The line was trailing, and reported to possibly terminate with a buoy. The origin and configuration of the entanglement could not be determined, therefore this interaction is considered a prorated serious injury under criterion L10.	PRORATE	Entangled / entrapped	Marine debris (rope and buoy)	N/A	N/A	N/A	L10	0.75	0

Appendix Table 1.1 -- Human-marine mammal interaction records reviewed for injury and mortality, 2015-2019.

AKRO	7/4/2016	SEAK	Humpback Whale	Central North Pacific	PRORATE	A humpback whale was reported to be trailing a small amount of green line from its tail. The reporting party stated that the entanglement did not appear to be life-threatening, but no pictures were obtained and the nature and configuration of the entanglement was not determined. Therefore this interaction is considered a prorated serious injury under criterion L10.	PRORATE	Entangled / entrapped	Marine debris (rope)	N/A	N/A	N/A	L10	0.75	0
AKRO	7/7/2016	SEAK	Humpback Whale	Central North Pacific	PRORATE	A humpback whale became entangled in actively fished salmon drift gillnet. After the whale began towing the vessel, the fisherman began to cut the vessel free from the entangling gear. While the gear was being cut free, the whale dove and when it resurfaced it appeared to be free from gear; however, there is not confirmation from the fisherman that all gear was recovered, and some may have remained on the animal.	PRORATE	Entangled / entrapped	Fishery gear	AK SEAK salmon drift gillnet	Commercial	Gillnet	L10	0.75	0.75
AKRO	7/8/2016	SEAK	Humpback Whale	Central North Pacific	PRORATE	A subadult humpback whale was observed entangled in gillnet gear by a whale watch vessel. The whale was observed shedding some of the gear, which was then recovered by the whale watch vessel, but when the whale was last observed it still had webbing around the tailstock and 25 ft of trailing gear. This entanglement will be considered a prorated serious injury under criterion L10 due to the unknown configuration of the entanglement.	PRORATE	Entangled / entrapped	Fishery gear	AK SEAK salmon drift gillnet	Commercial	Gillnet	L10	0.75	0.75
AKRO	7/11/2016	SEAK	Humpback Whale	Central North Pacific	NSI	A humpback whale calf was observed entangled in 3/8 inch line. The line passed through the whale's mouth, forming a bridle, and then trailed further back on either side. The whale was observed entangled for over a week before a disentanglement team responded and cut gear free. A short time later, the whale dropped the gear and multiple parties reported the calf was gear free.	NSI	Entangled / entrapped	Marine debris (unidentified)	N/A	N/A	N/A	L3	0	0
AKRO	7/15/2016	SEAK	Humpback Whale	Central North Pacific	PRORATE	A humpback whale was observed entangled in gillnet. The netting was wrapped around the animal's head and the animal was swimming continuously at the surface without diving. The whale was not seen again. Although the gear wrapped around the whale's body, it was not confirmed to be constricting, therefore this entanglement is prorated under criterion L10.	PRORATE	Entangled / entrapped	Fishery gear	AK SEAK salmon drift gillnet	Commercial	Gillnet	L10	0.75	0.75
AKRO	7/31/2016	SEAK	Humpback Whale	Central North Pacific	NSI	A humpback whale became entangled in an anchorline of a small skiff. The whale began pulling the boat, so the operator cut the line, leaving the whale entangled with ~100 ft of line and an 8 lb anchor. There was originally one confirmed wrap around the whale's peduncle, and possibly another further forward. The reporting party thought it likely that the whale would shed the gear, and multiple on-the-water observers reported that the whale then shed the gear. Additional on-the-water surveys over the next week of the same group of whales did not identify any entangled whales, further confirming the belief that the whale shed the gear shortly after entanglement.	NSI	Entangled / entrapped	Ship's ground tackle	Unknown hook and line	Recreational	Hook and line	L10	0	0

Appendix Table 1.1 -- Human-marine mammal interaction records reviewed for injury and mortality, 2015-2019.

AKRO	7/31/2016	SEAK	Humpback Whale	Central North Pacific	NSI	A humpback whale became entangled in a purse seine, and was reported to swim away uninjured after being completely disentangled by the crew.	NSI	Entangled / entrapped	Fishery gear	AK SEAK salmon purse seine	Commercial	Seine	L10	0	0
AKRO	9/11/2016	GOA	Humpback Whale	Central North Pacific	DEAD	A humpback whale carcass was discovered stranded and in a state of moderate decomposition. A necropsy was conducted and blunt trauma and hemorrhage along the right jaw, cervical region, and thorax was noted. The examiner noted that the injuries were probably caused by a ship strike.	DEAD	Ship strike	Vessel (unknown)	N/A	N/A	N/A	N/A	1	0
AKRO	1/3/2017	SEAK	Humpback Whale	Central North Pacific	SI	A subadult humpback whale was observed to be entangled in a 1-inch cable running from a barge to a 6-ton anchor in ~ 30 ft of water. The cable was through the whale's mouth and around its body posterior to the blow hole. The whale was successfully disentangled and all gear was recovered. Following the disentanglement, the whale remained on the surface briefly and then slowly swam away. The entanglement caused some lacerations and a cut about 1-1.5 inches deep into the whale's soft tissue.	NSI	Constricting entanglement	Ship's ground tackle	N/A	N/A	N/A	L2	0	0
AKRO	1/21/2017	SEAK	Humpback Whale	Central North Pacific	PRORATE	A humpback whale was observed with a 1.5 ft diameter bright orange-red buoy trailing 40-60 ft behind it. The whale's movements did not appear compromised, and when it dove the buoy submerged along with it. The extent of the entanglement could not be confirmed; thus, this event is prorated at L10.	PRORATE	Entangled / entrapped	Marine debris (rope and buoy)	N/A	N/A	N/A	L10	0.75	0
AKRO	6/9/2017	SEAK	Humpback Whale	Central North Pacific	PRORATE	A 40 ft recreational vessel traveling at an unknown speed was observed to strike a humpback whale. The whale appeared to be bubble feeding when the vessel drove over the bubbles and struck the animal. The boat was nudged and rocked as a result of the interaction, but the observer did not notice any blood in the water and saw the whale swimming away after the incident. There is no additional information available on the health of the whale following the strike.	PRORATE	Ship strike	Vessel (recreational)	N/A	N/A	N/A	L7b	0.14	0
AKRO	7/8/2017	SEAK	Humpback Whale	Central North Pacific	NSI	An anchored 47 ft sailboat was struck by a humpback whale causing the vessel to rise and fall hard. The whale was in a group of 3 or 4 animals and kept swimming following the impact. There was no sign of injury to the whale, but the boat was damaged.	NSI	Ship strike	Vessel (recreational)	N/A	N/A	N/A	L6c	0	0
AKRO	7/20/2017	SEAK	Humpback Whale	Central North Pacific	PRORATE	A 40 ft rigid hull inflatable whale watching vessel traveling at 13 knots struck a humpback whale. The vessel was powering up, saw the spout off the bow, and tried to power down but felt a bump. The whale surfaced behind the boat following the collision. Nothing abnormal about the whale was noticed, and no blood was seen in the water. There is no additional information on the health of the whale following the impact.	PRORATE	Ship strike	Vessel (commercial)	N/A	N/A	N/A	L6b	0.2	0

Appendix Table 1.1 -- Human-marine mammal interaction records reviewed for injury and mortality, 2015-2019.

AKRO	7/21/2017	SEAK	Humpback Whale	Central North Pacific	SI	A subadult humpback whale was observed entangled in multiple wraps of heavy (~5/8 inch) line around its head and body. The material appeared to be heavier than gillnet (no mesh observed). Floats and line were also reported to be trailing the animal. The whale was described as bobbing up and down to breathe, barely making forward progress.	SI	Constricting entanglement	Fishery gear	Unknown	Unknown	Unknown	L2	1	0
AKRO	8/9/2017	SEAK	Humpback Whale	Central North Pacific	DEAD	A subadult male humpback whale was observed dead on the bulbous bow of a 950 ft cruise ship. The speed and specific timing of the ship strike are unknown. External and internal findings of the necropsy indicate that the cause of death was from significant trauma consistent with a vessel strike. The most likely scenario is that the animal was struck around the head/neck, then quickly wrapped around the bulbous bow.	DEAD	Ship strike	Vessel (commercial)	N/A	N/A	N/A	N/A	1	0
AKRO	8/21/2017	SEAK	Humpback Whale	Central North Pacific	PRORATE	A commercial fiberglass charter fishing boat of unknown length traveling at 25 knots was observed striking a humpback whale. The boat struck the whale with its bow pitched upward nearly 45 degrees until the stern/engine hit, which pitched the boat back down. The strike was described as a "hard strike." The observers were unable to provide any additional information about the health of the whale following the impact.	PRORATE	Ship strike	Vessel (commercial)	AK/WA/OR/CA commercial passenger fishing vessel	Commercial	Unknown	L6b	0.2	0.2
AKRO	8/27/2017	SEAK	Humpback Whale	Central North Pacific	SI	A subadult humpback whale was observed entangled in the ground tackle of a tour vessel at anchor in SE AK. The whale was entangled in the vessel's 7/8 inch anchor chain which was wrapped around the lower jaw with a half twist. The animal was entangled only 50 ft from the vessel, while over 400 ft of chain remained below in just over 100 ft of water. The whale was in good condition and did not appear to be fighting the weight of the chain too much. In order to disentangle the whale, the anchor chain was cut at the vessel's winch in hopes that it would allow the animal to free itself of the simple wrap and short tail of chain. After the chain was cut, the whale remained at the surface for some time before submerging. A whale thought to be the freed animal was seen about 1/4 nm away and on the next surfacing about 1/2 nm away. The team remained in the area looking for the whale, but it was not re-located. It is highly likely that the whale was free of the gear and had moved off.	NSI	Constricting entanglement	Ship's ground tackle	N/A	N/A	N/A	L2	0	0
AKRO	5/27/2018	SEAK	Humpback Whale	Central North Pacific	DEAD	A dead moderately decomposed humpback whale was first observed floating in the water, and then washed up on the beach. A necropsy was conducted and ultimately concluded that the evidence of significant blunt trauma indicated a vessel strike as the most probable cause of death.	DEAD	Ship strike	Vessel (unknown)	N/A	N/A	N/A	N/A	1	0

Appendix Table 1.1 -- Human-marine mammal interaction records reviewed for injury and mortality, 2015-2019.

AKRO	6/25/2018	SEAK	Humpback Whale	Central North Pacific	PRORATE	<p>A humpback whale became entangled in gillnet fishing gear. The fisherman spent an hour attempting to free the whale after it hit his net, but eventually cut the gear free for the safety of his vessel. The fisherman reported that the whale took 30-40 ft of webbing and corkline, and possibly some leadline as well. During the entanglement (after putting tension on his gear) the fisherman observed some blood in the water due to the whale's resulting surface wounds. Once freed, the whale was surfacing and diving normally, with the gear wrapped around its midsection. It is not believed to be tightly wrapped, and the tail is thought to be clear of gear. The same animal was thought to be re-sighted later in the day with 10-20 corks of white gillnet cork on it. No additional information is available on the outcome of the entanglement; however, this animal is believed to have been re-sighted on July 8th and again on July 23rd with a very similar description of the entanglement and associated fishing gear. The July 8th observer stated that he did not think that the animal appeared compromised by the entanglement, but did say that it appeared "really tired." The July 23rd observers indicated that they watched the whale for about 2 hours, during which time it would sound (but with no fluking) for about 7 minutes, then come up for a breath and go back down. The observers did not think that it appeared to be in distress nor in bad condition. This interaction has been assigned a prorated value of 0.75 under criterion L10 because the constricting nature of the midsection wrap cannot be verified.</p>	PRORATE	Entangled / entrapped	Fishery gear	AK SEAK salmon drift gillnet	Commercial	Gillnet	L10	0.75	0.75
AKRO	6/28/2018	SEAK	Humpback Whale	Central North Pacific	SI	<p>A 65-ft jet drive whale watching catamaran vessel traveling at 20-21 knots struck a humpback whale and rode up over the top of the animal on the port side. The vessel stopped as soon as possible after the collision. The whale was then seen surfacing off the port stern of the vessel, at which time it took one breath and then fluked. No visible wounds, blood, or debris from the incident were observed following the strike. No damaged was reported by the vessel, and there is no additional information about the condition of the whale following the strike.</p>	SI	Ship strike	Vessel (commercial)	N/A	N/A	N/A	L6a	1	0
AKRO	7/1/2018	SCAK	Humpback Whale	Central North Pacific	PRORATE	<p>An adult humpback whale was observed to be entangled in SEAK recreational shrimp pot gear. The nature of the entanglement could not be confirmed; however, it included a buoy with 700+ ft of sinking line. It is believed that the animal self-released the gear. The reporting party went to the area where the animal had been seen, retrieved gear, and passed it on to the harbor master. No injuries to the whale were observed or reported. However, because the original configuration of the entanglement is unknown and we cannot confirm the animal was gear free when it swam away, this interaction has been assigned an L10 criterion.</p>	PRORATE	Entangled / entrapped	Fishery gear	SEAK shrimp pot	Recreational	Pot	L10	0.75	0

Appendix Table 1.1 -- Human-marine mammal interaction records reviewed for injury and mortality, 2015-2019.

AKRO	8/13/2018	SEAK	Humpback Whale	Central North Pacific	SI	An adult humpback whale was struck by a 375 ft transportation ferry traveling at 20.5 knots. The whale was not observed after the incident, and no damage to the vessel was reported.	SI	Ship strike	Vessel (commercial)	N/A	N/A	N/A	L6a	1	0
AKRO	9/16/2018	SEAK	Humpback Whale	Central North Pacific	PRORATE	A subadult humpback whale was observed to be entangled in 100 ft of longline with 1 buoy attached. The initial observation reported that the whale had line coming out of both sides of its mouth, and that it was unable to dive. The reporting party attempted disentanglement (unauthorized) and reported successful removal of the gear. However, because the original configuration of the entanglement is unclear, and because the whale was likely gear-free upon release but this cannot be confirmed, the interaction has been assigned an L10 criterion.	PRORATE	Entangled / entrapped	Fishery gear	Unknown	Unknown	Unknown	L10	0.75	0
AKRO	11/11/2018	SEAK	Humpback Whale	Central North Pacific	SI	A subadult humpback whale was observed to be entangled around the upper jaw in heavy gauge lines, which were anchored to the bottom and used for mooring docks. The entanglement configuration included two buoys and a dense snarl of lines, several of which were covering the leading edge of the blowhole. The whale was reported to appear healthy and breathing normally despite being anchored / entangled. This animal was successfully disentangled, all gear was removed, and there is no report of serious injury to the whale as a result of the incident.	NSI	Entangled / entrapped	Other	N/A	N/A	N/A	L2	0	0
AKRO	12/7/2018	SEAK	Humpback Whale	Central North Pacific	PRORATE	A humpback whale was observed to be entangled in gillnet fishing gear. The animal was reported to have 4-5 gillnet corks coming from the corner of its mouth. The remainder of the animal did not appear to be entangled. It was unknown whether the gear was wrapped around the whale's mouth. No trailing gear was observed and the whale appeared to be in good condition and was observed diving. No other information about this interaction was reported.	PRORATE	Entangled / entrapped	Fishery gear	AK SEAK salmon drift gillnet	Commercial	Gillnet	L10	0.75	0.75
AKRO	6/25/2019	SEAK	Humpback Whale	Central North Pacific	PRORATE	A humpback whale was reported to be entangled on the right pectoral flipper by a 5-foot wide snarl of unidentified green line or webbing that trailed down the body but was not wrapped around the body. The animal appeared lethargic, taking only two breaths during the 20-minute observation. Two other whales were observed pushing laterally and diagonally on the animal. The gear was never seen above the surface of the water but the reported asymmetry between the left and right sides of the animal and the animal's behavior and interaction with other nearby humpback whales indicated an entanglement.	PRORATE	Entangled / entrapped	Marine debris (unidentified)	N/A	N/A	N/A	L10	0.75	0
AKRO	6/27/2019	SEAK	Humpback Whale	Central North Pacific	NSI	A humpback whale was observed with heavy line draped on the barnacles on one of the fluke tips. Additional sightings of the whale without gear indicate the animal self-released from the entanglement.	NSI	Entangled / entrapped	Marine debris (rope)	N/A	N/A	N/A	L3	0	0

Appendix Table 1.1 -- Human-marine mammal interaction records reviewed for injury and mortality, 2015-2019.

AKRO	7/10/2019	SEAK	Humpback Whale	Central North Pacific	SI	An adult female humpback whale was struck by a 78-foot whale watching jet drive catamaran traveling at 22 knots. The captain reported hearing and feeling a thud on the port side and then saw a humpback whale in the boat's wake. The whale was observed breathing twice and then slowly moving out of the area. The next day a humpback whale was observed feeding in the same location with superficial injuries on its head consistent with a ship strike. The same whale had been photographed a week prior to the strike without the injuries. The whale appeared to be behaving normally with strong blows and was actively feeding. However, given the size and speed of the vessel involved in the strike, this case is being assigned as a SI.	SI	Ship strike	Vessel (commercial)	N/A	N/A	N/A	L6a	1	0
AKRO	8/21/2019	SEAK	Humpback Whale	Central North Pacific	SI	A humpback whale was struck by a 154-foot USCG cutter travelling at 16 knots. The crew did not see any whales in the immediate area when the impact occurred, but CCTV footage showed a humpback whale surface 15 yards directly in front of the ship, submerge, and then strike the port bow of the ship. The impact caused the bow of the vessel to be pushed upward. The cutter turned around to return to the impact location and did not see any visible blood in the water, sheens, or any other indication of a strike. Approximately 30 minutes later a humpback whale surfaced 300 yards from the strike location but it had no apparent injuries or indication of a strike; however we cannot confirm that this was the same animal that was struck, nor was the observation period long enough to determine if this whale was injured. Two humpback whale carcasses were reported in the area following the strike but a necropsy was not possible on either carcass.	SI	Ship strike	Vessel (government)	N/A	N/A	N/A	L6a	1	0
AKRO	8/25/2019	SEAK	Humpback Whale	Central North Pacific	PRORATE	A humpback whale was observed to have been struck by a recreational Boulton boat (<65 feet in length) travelling at an unknown but high rate of speed (>10 knots). The boat was travelling fast enough that the impact with the whale caused the boat to become airborne. A whale watching boat provided photographs of the whale after impact, showing superficial lacerations from the propeller on the dorsal fin. No information was available regarding the animal's behavior before the impact and no additional information was available regarding the condition of the whale immediately after the impact. Since the initial report, this whale has been resighted several times, it is known to have recovered from any sustained injuries from the boat strike, and it has made a full migration, returning with a healthy calf. The injury determination is therefore changed to NSI.	NSI	Ship strike	Vessel (recreational)	N/A	N/A	N/A	L6b	0	0

Appendix Table 1.1 -- Human-marine mammal interaction records reviewed for injury and mortality, 2015-2019.

AKRO	8/30/2019	GOA	Humpback Whale	Central North Pacific	SI	The port stabilizer of a 213-meter (699-foot) cruise ship traveling at 17.8 knots struck a humpback whale. The crew noticed two other humpback whales in the distance then suddenly saw a humpback whale surface 10 meters from the port side below the bridge wing. The animal dove and 2 seconds later the ship received an alarm on the port stabilizer. The crew discovered damage to the stabilizer. The whale was not seen again by the crew. CCTV shows a whale surfacing astern of the ship but the condition of the whale cannot be determined from the footage. The outcome of the impact is unknown.	SI	Ship strike	Vessel (commercial)	N/A	N/A	N/A	L6a	1	0
AKRO	9/6/2019	SEAK	Humpback Whale	Central North Pacific	PRORATE	A humpback whale was observed dragging a 14-inch round, orange buoy behind it on the surface. The configuration of the entanglement is unknown. The animal was traveling at a high rate of speed and its mobility did not appear to be impaired. The entanglement is believed to be recreational pot gear.	PRORATE	Entangled / entrapped	Fishery gear	Unknown pot	Recreational	Pot	L10	0.75	0
AKRO	9/11/2019	SEAK	Humpback Whale	Central North Pacific	PRORATE	A humpback whale was observed entangled with an orange A2 buoy attached in an unknown location and configuration. The whale was observed moving without any obvious distress.	PRORATE	Entangled / entrapped	Fishery gear	Unknown	Unknown	Unknown	L10	0.75	0
AKRO	10/4/2019	SEAK	Humpback Whale	Central North Pacific	PRORATE	A humpback whale was reported to be entangled in the buoy line of a 5-string shrimp pot set. The entanglement was described as forward on the body since the tail and peduncle were clear of any entangling material, but it is unknown whether the entanglement involved any constricting wraps. The animal was reported trailing about 150 feet of line with an orange or faded red medium-sized polyball attached. The animal was mobile and appeared to be in good condition.	PRORATE	Entangled / entrapped	Fishery gear	Unknown shrimp pot	Unknown	Pot	L10	0.75	0
AKRO	6/6/2015	GOA	Humpback Whale	Western North Pacific, Central North Pacific	SI	A humpback whale became entangled in a set gillnet. The whale appeared to have netting tangled around its tailstock, dorsal fin, and left pectoral fin. Alaska State Troopers responded by skiff and cut the netting and lead line free from the whale. The whale then swam away. The troopers reported that they were unsure whether any netting remained on the whale, although they did observe the whale use both pectoral fins and fluke without restriction. The initial injury determination was a serious injury under criterion L2, but due to intervention by troopers the severity of this injury was reduced to criterion L10. This interaction cannot be considered a non-serious injury because the absence of gear on the whale could not be confirmed.	PRORATE	Entangled / entrapped	Fishery gear	AK Kodiak salmon set gillnet	Commercial	Gillnet	L2	0.75	1
AKRO	7/12/2015	PWS	Humpback Whale	Western North Pacific, Central North Pacific	NSI	A humpback whale became caught in a purse seine. While in the net, the whale exhibited normal behavior and breathing. The fisherman freed the whale from the net, and stated that the whale swam free - uninjured and trailing no gear. The fisherman then watched the whale surface normally for ~30 minutes before he left the area. This interaction qualifies as a non-serious injury.	NSI	Entangled / entrapped	Fishery gear	AK salmon purse seine	Commercial	Seine	L10	0	0

Appendix Table 1.1 -- Human-marine mammal interaction records reviewed for injury and mortality, 2015-2019.

AKRO	7/29/2015	GOA	Humpback Whale	Western North Pacific, Central North Pacific	PRORATE	A humpback whale was reported to be entangled in crab pot gear. Several wraps around the animal's tailstock were confirmed, but the head, mouth, and pectoral flippers were free from gear. The animal was reported to be trailing 30 fathoms of line with a Spongex buoy at the end. The gear was determined to have been set three days prior. Despite efforts to resight the entangled whale it was not seen again. The whale may have shed the gear, but this cannot be confirmed, therefore this interaction qualifies as a prorated serious injury under criterion L10.	PRORATE	Entangled / entrapped	Fishery gear	Dungeness crab pot	Recreational	Pot	L10	0.75	0
AKRO	8/6/2015	GOA	Humpback Whale	Western North Pacific, Central North Pacific	NSI	A humpback whale was entangled in a purse seine net. The whale was initially cut free from the boat, but remained entangled in gear, however, the fishermen were eventually able to remove all gear from the whale. There are very few details for this interaction, so this will be considered a non-serious injury due to the whale being released by the fisherman free of gear.	NSI	Entangled / entrapped	Fishery gear	AK Cook Inlet salmon purse seine	Commercial	Seine	L10	0	0
AKRO	9/6/2015	GOA	Humpback Whale	Western North Pacific, Central North Pacific	PRORATE	A sail boater reported observing an entangled humpback whale. The whale was reported to be entangled with at least one, and perhaps multiple shrimp pots. The entanglement was located on the animal's tailstock. The whale was mobile and was not sighted again. This entanglement will be considered a prorated serious injury under criterion L10 due to the unknown configuration and nature of the entanglement.	PRORATE	Entangled / entrapped	Fishery gear	GOA shrimp pot	Recreational	Pot	L10	0.75	0
AKRO	10/20/2015	WAK	Humpback Whale	Western North Pacific, Central North Pacific	SI	A subadult male humpback whale was observed near Dutch Harbor. The animal appeared sick and showed signs of entanglement. Some investigation indicated that the whale was entangled, heavily weighted, and in poor health. The whale died before a disentanglement team could assist it. A necropsy showed the whale had been entangled in multiple sets of pot gear for an extended period of time, as indicated by the very chronic and inflamed lacerations at the areas of entanglement.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI unknown pot - commercial and BSAI Dungeness crab pot - subsistence	Commercial, Subsistence	Pot	L2	1	0
AKRO	6/22/2016	SEAK	Humpback Whale	Western North Pacific, Central North Pacific	SI	A humpback whale was entangled in approximately 600 ft of line that terminated in a buoy. The line wrapped around the whale and the pectoral fins, and abrasions from the line were visible. NOAA's Office of Law Enforcement responded and successfully disentangled the animal, freeing it of all gear.	NSI	Entangled / entrapped	Marine debris (rope and buoy)	N/A	N/A	N/A	L2	0	0
AKRO	7/4/2016	Kodiak	Humpback Whale	Western North Pacific, Central North Pacific	PRORATE	A 20 ft vessel struck a whale at 20 knots. The whale was observed 3-5 minutes later at a distance of 200 yards. The whale did not appear injured while it was observed during subsequent dive cycles. This interaction qualifies as a prorated serious injury under criterion L6b due to the vessel's size and speed.	PRORATE	Ship strike	Vessel (recreational)	N/A	N/A	N/A	L6b	0.2	0

Appendix Table 1.1 -- Human-marine mammal interaction records reviewed for injury and mortality, 2015-2019.

AKRO	7/24/2016	WAK	Humpback Whale	Western North Pacific, Central North Pacific	DEAD	A humpback whale was found stranded in a state of moderate decomposition. The whale was entangled in a 7/8 inch poly line that was wrapped around its tailstock and upper jaw. There was significant scarring and abrasion at the areas of entanglement. The end of the line trailed into deep water and could not be pulled in.	DEAD	Entangled / entrapped	Marine debris (unidentified)	N/A	N/A	N/A	N/A	1	0
AKRO	7/28/2016	SCAK	Humpback Whale	Western North Pacific, Central North Pacific	NSI	An adrift 22 ft boat was struck by a humpback whale. A passenger was ejected into the water and the boat began taking on water. The whale was reported to appear uninjured. This interaction qualifies as a non-serious injury under criterion L6c due to the vessel's size and speed.	NSI	Ship strike	Vessel (recreational)	N/A	N/A	N/A	L6c	0	0
AKRO	7/28/2016	SCAK	Humpback Whale	Western North Pacific, Central North Pacific	SI	An entangled humpback whale was observed from a tour vessel. The whale was trailing small gauge neon line from its fluke and another larger gauge line was wrapped around the base of the tailstock and was cutting into the animal. This is considered a serious injury under criterion L2 due to the constricting wrap around the whale's tailstock.	SI	Entangled / entrapped	Marine debris (unidentified)	N/A	N/A	N/A	L2	1	0
AKRO	8/24/2016	Kodiak	Humpback Whale	Western North Pacific, Central North Pacific	NSI	A humpback whale was observed by a USCG vessel's crew to be entangled in, and trailing, 60 ft of line and a buoy. Then, while they were watching, the whale shed the gear. The USCG recovered the buoy.	NSI	Entangled / entrapped	Fishery gear	Dungeness crab pot	Recreational	Pot	L10	0	0
AKRO	8/26/2016	GOA	Humpback Whale	Western North Pacific, Central North Pacific	NSI	A humpback whale was observed to be entangled in Dutch Harbor. The animal was observed with a thick nylon line exiting the right side of the mouth which led straight down and was heavily weighted by something on the bottom. A response team attempted to grapple the weighted line in order to cut the line and free the whale, but had no success. A short time later the whale was observed to free itself and was completely free of gear.	NSI	Entangled / entrapped	Marine debris (unidentified)	N/A	N/A	N/A	L2	0	0
AKRO	6/18/2017	SCAK	Humpback Whale	Western North Pacific, Central North Pacific	PRORATE	A 24 - 28 ft commercial charter vessel traveling at 22 knots struck a humpback whale. Following the strike a small amount of blood was observed in the water, but the whale appeared to swim away unharmed. No external injuries to the whale were observed. There is no additional information on the health of the whale following the strike. L6b and L11 are both applicable criteria in this case. L11 has been assigned due to a higher level of severity.	PRORATE	Ship strike	Vessel (commercial)	AK/WA/OR/CA commercial passenger fishing vessel	Commercial	Unknown	L11	0.52	0.52
AKRO	9/27/2017	BS	Humpback Whale	Western North Pacific, Central North Pacific	SI	A humpback whale was observed entangled in AK BSAI Pacific cod pot gear. The gear included a 500 lb pot, 66 fathoms of line, and the associated fishing floats. At one time, the animal was described as appearing to be immobile. The whale was not relocated following the initial entanglement sighting on the previous day.	SI	Constricting entanglement	Fishery gear	AK BSAI Pacific cod pot	Commercial	Pot	L2	1	1
NPGOP	2/3/2018	BS	Humpback Whale	Western North Pacific, Central North Pacific	DEAD	A juvenile humpback whale was caught and killed by BSAI pollock trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI pollock trawl	Commercial	Trawl	N/A	1	1

Appendix Table 1.1 -- Human-marine mammal interaction records reviewed for injury and mortality, 2015-2019.

AKRO	8/10/2018	Kodiak	Humpback Whale	Western North Pacific, Central North Pacific	PRORATE	A humpback whale was observed to be entangled. The whale was described as entangled in moderate- to heavy-gauge line originating forward on the body (mouth, flippers or both), with at least 400 ft of line trailing the animal and a red polyball trailing approximately 50 ft behind the animal. The animal was initially partially disentangled by a reporting party (unauthorized), with approximately 400 ft of trailing gear removed. During subsequent resightings, the whale was observed to be dragging a polyball about 60-70 ft behind it, with at least 60 ft of line trailing behind the polyball. The outcome of this entanglement is unknown. This interaction has been assigned an L10 criterion because the original and final configuration of the entanglement are unknown.	PRORATE	Entangled / entrapped	Fishery gear	Unknown	Unknown	Unknown	L10	0.75	0
AKRO	10/15/2018	BS	Humpback Whale	Western North Pacific, Central North Pacific	SI	A humpback whale was observed to be heavily entangled in AK BSAI Pacific cod pot gear. The entanglement consisted of numerous buoys, a cod pot, and 200 ft of line wrapped around the animal's fluke and head. The animal was unable to dive and was described as being "hog-tied." This animal was successfully disentangled with complete gear removal, and was observed to be swimming freely. There is no report of serious injury to the whale as a result of the entanglement.	NSI	Constricting entanglement	Fishery gear	AK BSAI Pacific cod pot	Commercial	Pot	L2	0	1
AKRO	5/13/2019	SCAK	Humpback Whale	Western North Pacific, Central North Pacific	PRORATE	A humpback whale was observed to be towing a 3-foot diameter orange poly buoy within 5 feet of the animal. No other details are known about the type of connecting and entangling line or its configuration on the animal. The whale was approximately 20 feet in length and alongside a larger humpback whale that was approximately 40 feet in length. The reporting party suspected that the buoy was part of shrimp pot gear but was unable to see whether a pot may have still been attached.	PRORATE	Entangled / entrapped	Fishery gear	Unknown shrimp pot	Unknown	Pot	L10	0.75	0
AKRO	10/8/2019	SCAK	Humpback Whale	Western North Pacific, Central North Pacific	PRORATE	A humpback whale was observed entangled in subsistence crab pot gear. The entanglement involved the tail and/or the pectoral flipper. The whale at least partially self-released, and approximately 200 feet of 3/8-inch line and two 14-inch bullet Spongex buoys were recovered. There was broken line among the recovered gear. Observers were unable to confirm if the animal was completely free of the gear. A whale was observed departing the area, but it is unknown if this was the entangled whale. The owner of the gear was contacted and confirmed that it was subsistence crab pot gear and the missing pot was a 4x4 pyramid pot with over 400 feet of attached line.	PRORATE	Entangled / entrapped	Fishery gear	BSAI Dungeness crab pot	Subsistence	Pot	L10	0.75	0
NPGOP	7/5/2016	BS	Killer Whale	Eastern North Pacific Alaska Resident	DEAD	A killer whale became entangled in, and was killed by, longline gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI Pacific cod longline	Commercial	Longline	N/A	1	1

Appendix Table 1.1 -- Human-marine mammal interaction records reviewed for injury and mortality, 2015-2019.

NPGOP	7/19/2015	WAK	Killer Whale	Eastern North Pacific Alaska Resident, Eastern North Pacific Gulf of Alaska, Aleutian Islands, and Bering Sea Transient	SI	A killer whale was hooked on AK BSAI Greenland turbot longline gear during an unsampled haul and released. The interaction was not observed by the fishery observer aboard the vessel, but it was reported following a conversation with the captain. The captain reported that the whale was released immediately without notifying the observer because the hooked / entangled whale posed a threat to the ship. The captain reported that the whale was "not moving very much" after it was released. Although the details are limited, this interaction is best classified under SI criterion S7b - and should be considered a serious injury due to the animal's reported behavior following release. It is also unclear whether all gear was recovered or if the animal was released trailing gear.	SI	Entangled / entrapped	Fishery gear	AK BSAI Greenland turbot longline	Commercial	Longline	S6	1	1
NPGOP	7/28/2016	BS	Killer Whale	Eastern North Pacific Alaska Resident, Eastern North Pacific Gulf of Alaska, Aleutian Islands, and Bering Sea Transient	SI	An observer reported seeing about eight killer whales alongside the fishing vessel while it was trawling, when suddenly there was a loud noise and the boat shook violently. After the shudder, blood was visible in the water at the vessel's stern. The killer whales that had surrounded the vessel immediately left the side of the vessel and remained at the location where the boat had shuddered. The observer reported that he and the captain both believed a calf was hit by the propeller.	SI	Ship strike	Vessel (commercial)	AK BSAI flatfish trawl	Commercial	Trawl	S3	1	1
NPGOP	7/25/2018	BS	Killer Whale	Eastern North Pacific Alaska Resident, Eastern North Pacific Gulf of Alaska, Aleutian Islands, and Bering Sea Transient	DEAD	A male killer whale was caught and killed by BSAI flatfish trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI flatfish trawl	Commercial	Trawl	N/A	1	1
AKRO	9/4/2016	SEAK	Killer Whale	Eastern North Pacific Alaska Resident, Eastern North Pacific Northern Resident, West Coast Transient	SI	A killer whale was reported to be entangled in pot gear in Icy Strait. The entanglement was thought to possibly originate at the tailstock / fluke. The reporting party attempted a disentanglement without success.	SI	Entangled / entrapped	Fishery gear	Unknown pot	Unknown	Pot	S6	1	0
SWFSC	4/18/2015	WC	Killer Whale	Eastern North Pacific Gulf of Alaska, Aleutian Islands, and Bering Sea Transient, West Coast Transient	DEAD	A large adult male killer whale was found dead and entangled in a considerable amount of crab pot gear. A necropsy showed that the animal was alive when it was initially entangled and a genetic analysis indicated that it was a transient whale from either the Eastern North Pacific Gulf of Alaska, Aleutian Islands, and Bering Sea Transient stock or the West Coast Transient stock. The AT1 Transient Stock was ruled out because all of these whales were accounted for following this mortality.	DEAD	Entangled / entrapped	Fishery gear	CA Dungeness crab pot	Commercial	Pot	N/A	1	1
WCRO	4/5/2016	WC	Killer Whale	West Coast Transient	NSI	A West Coast transient killer whale was observed to be briefly entangled in CA Dungeness crab pot fishery gear. At least two buoys were visible. The gear self-released from the animal and no injuries were reported.	NSI	Entangled / entrapped	Fishery gear	CA Dungeness crab pot	Commercial	Pot	S7b	0	0

Appendix Table 1.1 -- Human-marine mammal interaction records reviewed for injury and mortality, 2015-2019.

AKRO	6/11/2015	WAK	Northern Fur Seal	Eastern Pacific	SI	A northern fur seal with a circumferential neck entanglement caused by trawl netting was disentangled and released on St. Paul Island. This interaction was initially a serious injury under criterion P8a, but the final determination is a non-serious injury because the animal was disentangled.	NSI	Constricting entanglement	Fishery gear	AK BSAI unknown trawl	Commercial	Trawl	P7b	0	0
AKRO	8/11/2015	WAK	Northern Fur Seal	Eastern Pacific	SI	A subadult male northern fur seal with a circumferential neck entanglement caused by a combination of line and tubing was captured and disentangled.	NSI	Constricting entanglement	Marine debris (misc. plastic)	N/A	N/A	N/A	P7b	0	0
AKRO	8/11/2015	WAK	Northern Fur Seal	Eastern Pacific	DEAD	A subadult northern fur seal carcass was discovered with a circumferential neck entanglement caused by green trawl netting. The trawl netting appeared to have also snagged on rocks while the seal was still alive, further entrapping the animal. The net was twisted numerous times and the seal carcass was contorted among the rocks.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI unknown trawl	Commercial	Trawl	N/A	1	0
AKRO	8/13/2015	WAK	Northern Fur Seal	Eastern Pacific	SI	A subadult male northern fur seal with a circumferential neck entanglement caused by a section of blue plastic pipe was captured and the pipe was removed from the animal's neck.	NSI	Constricting entanglement	Marine debris (misc. plastic)	N/A	N/A	N/A	P7b	0	0
AKRO	8/13/2015	WAK	Northern Fur Seal	Eastern Pacific	SI	A subadult female northern fur seal with a circumferential neck entanglement caused by monofilament gillnet was captured and a disentangling was attempted. The net was embedded into the animal's tissue, so complete removal was impossible. Responders believe they cut all encircling material, but were not certain and some netting remained embedded in the animal's neck.	SI	Constricting entanglement	Fishery gear	BSAI unknown gillnet	Unknown	Gillnet	P8a	1	0
AKRO	8/14/2015	WAK	Northern Fur Seal	Eastern Pacific	SI	A subadult northern fur seal with a circumferential neck entanglement caused by a single strand of line was captured and disentangled.	NSI	Constricting entanglement	Marine debris (rope)	N/A	N/A	N/A	P7b	0	0
AKRO	8/14/2015	WAK	Northern Fur Seal	Eastern Pacific	SI	A subadult male northern fur seal with a circumferential neck entanglement caused by a plastic lid rim was captured and disentangled.	NSI	Constricting entanglement	Marine debris (misc. plastic)	N/A	N/A	N/A	P7b	0	0
AKRO	10/16/2015	WAK	Northern Fur Seal	Eastern Pacific	SI	A northern fur seal was accidentally hit by a vehicle on the Polovina Turnpike in the early morning on St. Paul Island. The seal was euthanized following the accident.	DEAD	Body trauma	Vehicle	N/A	N/A	N/A	P9	1	0
AKRO	10/26/2015	WAK	Northern Fur Seal	Eastern Pacific	SI	A subadult northern fur seal with a circumferential neck entanglement caused by a packing band was captured and disentangled.	NSI	Constricting entanglement	Marine debris (packing band)	N/A	N/A	N/A	P7b	0	0
AKRO	10/27/2015	WAK	Northern Fur Seal	Eastern Pacific	SI	A subadult male northern fur seal with a circumferential neck entanglement that was caused by a yellow packing band / line was captured and disentangled.	NSI	Constricting entanglement	Marine debris (unidentified)	N/A	N/A	N/A	P7b	0	0
AKRO	10/28/2015	WAK	Northern Fur Seal	Eastern Pacific	SI	A subadult northern fur seal was observed with a circumferential neck entanglement caused by either gillnet or monofilament line.	SI	Constricting entanglement	Fishery gear	BSAI unknown	Unknown	Unknown	P8a	1	0
AKRO	7/10/2016	BS	Northern Fur Seal	Eastern Pacific	SI	A subadult male northern fur seal was observed with a circumferential neck entanglement caused by trawl netting.	SI	Constricting entanglement	Fishery gear	AK BSAI unknown trawl	Commercial	Trawl	P8a	1	0

Appendix Table 1.1 -- Human-marine mammal interaction records reviewed for injury and mortality, 2015-2019.

AKRO	7/10/2016	BS	Northern Fur Seal	Eastern Pacific	SI	An adult male northern fur seal was observed with a circumferential neck entanglement caused by unidentified material.	SI	Constricting entanglement	Marine debris (unidentified)	N/A	N/A	N/A	P8a	1	0
AKRO	7/10/2016	BS	Northern Fur Seal	Eastern Pacific	SI	A subadult male northern fur seal was observed with a circumferential neck entanglement caused by a black rubber band.	SI	Constricting entanglement	Marine debris (rubber band)	N/A	N/A	N/A	P8a	1	0
AKRO	7/10/2016	BS	Northern Fur Seal	Eastern Pacific	SI	An adult male fur seal was observed with a circumferential neck entanglement caused by unidentified material.	SI	Constricting entanglement	Marine debris (unidentified)	N/A	N/A	N/A	P8a	1	0
AKRO	7/12/2016	BS	Northern Fur Seal	Eastern Pacific	SI	An adult male fur seal was observed with a circumferential neck entanglement caused by a packing band.	SI	Constricting entanglement	Marine debris (packing band)	N/A	N/A	N/A	P8a	1	0
AKRO	8/4/2016	BS	Northern Fur Seal	Eastern Pacific	SI	A subadult male northern fur seal with a circumferential neck entanglement caused by a packing band was captured and disentangled.	NSI	Constricting entanglement	Marine debris (packing band)	N/A	N/A	N/A	P7b	0	0
AKRO	8/15/2016	BS	Northern Fur Seal	Eastern Pacific	SI	An adult female northern fur seal was entangled in yellow trawl netting. The animal was disentangled.	NSI	Entangled / entrapped	Fishery gear	AK BSAI unknown trawl	Commercial	Trawl	P7b	0	0
AKRO	8/16/2016	BS	Northern Fur Seal	Eastern Pacific	SI	A subadult female northern fur seal with a circumferential neck entanglement caused by a packing band was captured and disentangled.	NSI	Constricting entanglement	Marine debris (packing band)	N/A	N/A	N/A	P7b	0	0
AKRO	8/22/2016	BS	Northern Fur Seal	Eastern Pacific	SI	A subadult female fur seal with a circumferential neck entanglement caused by trawl netting was captured and disentangled.	NSI	Constricting entanglement	Fishery gear	AK BSAI unknown trawl	Commercial	Trawl	P7b	0	0
AKRO	8/22/2016	BS	Northern Fur Seal	Eastern Pacific	SI	A subadult male northern fur seal entangled in trawl netting was captured and disentangled.	NSI	Entangled / entrapped	Fishery gear	AK BSAI unknown trawl	Commercial	Trawl	P7b	0	0
AKRO	9/22/2016	BS	Northern Fur Seal	Eastern Pacific	SI	A subadult northern fur seal with a circumferential neck entanglement caused by line was captured and disentangled.	NSI	Constricting entanglement	Marine debris (unidentified)	N/A	N/A	N/A	P7b	0	0
AKRO	9/22/2016	BS	Northern Fur Seal	Eastern Pacific	SI	A subadult fur seal entangled in a considerable amount of netting was disentangled.	NSI	Constricting entanglement	Fishery gear	Unknown net	Unknown	Net	P7b	0	0
AKRO	9/22/2016	BS	Northern Fur Seal	Eastern Pacific	SI	An adult female fur seal was observed with a circumferential neck entanglement caused by a packing band.	SI	Constricting entanglement	Marine debris (packing band)	N/A	N/A	N/A	P8a	1	0
AKRO	9/22/2016	BS	Northern Fur Seal	Eastern Pacific	SI	A subadult northern fur seal was observed with a circumferential neck entanglement caused by a green packing band.	SI	Constricting entanglement	Marine debris (packing band)	N/A	N/A	N/A	P8a	1	0
AKRO	9/28/2016	BS	Northern Fur Seal	Eastern Pacific	SI	A subadult male fur seal with a rigid plastic ring around its neck was captured and the ring was removed.	NSI	Constricting entanglement	Marine debris (misc. plastic)	N/A	N/A	N/A	P7b	0	0
AKRO	9/28/2016	BS	Northern Fur Seal	Eastern Pacific	SI	An adult male northern fur seal was observed with a circumferential neck entanglement caused by unidentified material.	SI	Constricting entanglement	Marine debris (unidentified)	N/A	N/A	N/A	P8a	1	0
AKRO	10/3/2016	BS	Northern Fur Seal	Eastern Pacific	SI	A fur seal pup that was entangled in green netting was captured and disentangled.	NSI	Entangled / entrapped	Marine debris (unidentified)	N/A	N/A	N/A	P7b	0	0
AKRO	10/5/2016	BS	Northern Fur Seal	Eastern Pacific	SI	A subadult male northern fur seal with a circumferential neck entanglement caused by line was captured and disentangled.	NSI	Constricting entanglement	Marine debris (unidentified)	N/A	N/A	N/A	P7b	0	0

Appendix Table 1.1 -- Human-marine mammal interaction records reviewed for injury and mortality, 2015-2019.

AKRO	10/5/2016	BS	Northern Fur Seal	Eastern Pacific	SI	A subadult northern fur seal was observed with a circumferential neck entanglement caused by what appeared to be green netting or line.	SI	Constricting entanglement	Marine debris (unidentified)	N/A	N/A	N/A	P8a	1	0
AKRO	10/20/2016	BS	Northern Fur Seal	Eastern Pacific	SI	A northern fur seal pup was observed with a circumferential neck entanglement caused by unidentified material.	SI	Constricting entanglement	Marine debris (unidentified)	N/A	N/A	N/A	P8a	1	0
NPGOP	5/6/2017	BS	Northern Fur Seal	Eastern Pacific	DEAD	A male northern fur seal was caught and killed by trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI flatfish trawl	Commercial	Trawl	N/A	1	1
AKRO	7/19/2017	BS	Northern Fur Seal	Eastern Pacific	SI	An adult male northern fur seal was observed with a circumferential neck entanglement caused by green trawl netting.	SI	Constricting entanglement	Fishery gear	AK BSAI unknown trawl	Commercial	Trawl	P8a	1	0
AKRO	7/25/2017	BS	Northern Fur Seal	Eastern Pacific	SI	A northern fur seal was observed with a circumferential neck entanglement caused by unidentified marine debris.	SI	Constricting entanglement	Marine debris (unidentified)	N/A	N/A	N/A	P8a	1	0
AKRO	7/29/2017	BS	Northern Fur Seal	Eastern Pacific	SI	An adult female northern fur seal was observed with a constricting circumferential neck wound consistent with entanglement.	SI	Constricting entanglement	Marine debris (unidentified)	N/A	N/A	N/A	P8a	1	0
AKRO	7/31/2017	BS	Northern Fur Seal	Eastern Pacific	SI	A subadult male northern fur seal was observed with a constricting circumferential neck entanglement caused by blue twisted strand net.	SI	Constricting entanglement	Marine debris	N/A	N/A	N/A	P8a	1	0
AKRO	7/31/2017	BS	Northern Fur Seal	Eastern Pacific	SI	A subadult male northern fur seal was observed with a constricting circumferential neck entanglement caused by blue twisted strand net.	SI	Constricting entanglement	Marine debris	N/A	N/A	N/A	P8a	1	0
AKRO	8/5/2017	BS	Northern Fur Seal	Eastern Pacific	SI	A subadult male northern fur seal with a circumferential neck entanglement caused by gray twisted strand net was captured and disentangled.	NSI	Constricting entanglement	Marine debris	N/A	N/A	N/A	P7b	0	0
AKRO	8/5/2017	BS	Northern Fur Seal	Eastern Pacific	SI	An adult male northern fur seal was observed with a constricting circumferential neck entanglement caused by a packing band.	SI	Constricting entanglement	Marine debris (packing band)	N/A	N/A	N/A	P8a	1	0
AKRO	8/18/2017	BS	Northern Fur Seal	Eastern Pacific	SI	A yearling male northern fur seal with a circumferential neck entanglement caused by green netting was captured and disentangled.	NSI	Constricting entanglement	Marine debris	N/A	N/A	N/A	P7b	0	0
AKRO	9/4/2017	BS	Northern Fur Seal	Eastern Pacific	SI	An adult male northern fur seal was observed with a constricting circumferential neck entanglement caused by a blue packing band.	SI	Constricting entanglement	Marine debris (packing band)	N/A	N/A	N/A	P8a	1	0
AKRO	9/4/2017	BS	Northern Fur Seal	Eastern Pacific	SI	A juvenile northern fur seal was observed with a constricting circumferential neck entanglement caused by green netting.	SI	Constricting entanglement	Marine debris	N/A	N/A	N/A	P8a	1	0
AKRO	9/9/2017	BS	Northern Fur Seal	Eastern Pacific	SI	An adult female northern fur seal was observed with a constricting circumferential neck entanglement caused by a blue rope or part of a net.	SI	Constricting entanglement	Marine debris (unidentified)	N/A	N/A	N/A	P8a	1	0
AKRO	9/14/2017	BS	Northern Fur Seal	Eastern Pacific	SI	A northern fur seal pup was observed with a constricting circumferential neck entanglement caused by unidentified marine debris.	SI	Constricting entanglement	Marine debris (unidentified)	N/A	N/A	N/A	P8a	1	0
AKRO	9/26/2017	BS	Northern Fur Seal	Eastern Pacific	SI	A subadult female northern fur seal entangled in green fishing net was captured and disentangled.	NSI	Entangled / entrapped	Fishery gear	Unknown net	Unknown	Net	P7b	0	0

Appendix Table 1.1 -- Human-marine mammal interaction records reviewed for injury and mortality, 2015-2019.

AKRO	9/28/2017	BS	Northern Fur Seal	Eastern Pacific	SI	A yearling northern fur seal pup was observed with a constricting circumferential neck entanglement caused by unidentified marine debris.	SI	Constricting entanglement	Marine debris (unidentified)	N/A	N/A	N/A	P8a	1	0
AKRO	9/28/2017	BS	Northern Fur Seal	Eastern Pacific	SI	A 2-3 year old northern fur seal was observed with a constricting circumferential neck entanglement caused by yellow rope.	SI	Constricting entanglement	Marine debris (rope)	N/A	N/A	N/A	P8a	1	0
AKRO	9/30/2017	BS	Northern Fur Seal	Eastern Pacific	SI	A subadult male northern fur seal entangled in yellow braided strand netting was captured and disentangled. The entanglement did not break the skin or cause an external wound	NSI	Entangled / entrapped	Marine debris	N/A	N/A	N/A	P7b	0	0
AKRO	10/10/2017	BS	Northern Fur Seal	Eastern Pacific	SI	A 2 year old male northern fur seal entangled in blue net was captured and disentangled.	NSI	Entangled / entrapped	Marine debris	N/A	N/A	N/A	P7b	0	0
AKRO	10/10/2017	BS	Northern Fur Seal	Eastern Pacific	SI	A subadult northern fur seal was observed with a single strand circumferential neck entanglement caused by unidentified marine debris.	SI	Constricting entanglement	Marine debris (unidentified)	N/A	N/A	N/A	P8a	1	0
AKRO	10/10/2017	BS	Northern Fur Seal	Eastern Pacific	SI	A subadult male northern fur seal was observed with a constricting circumferential neck entanglement caused by a packing band. A disentangling effort was attempted but it was not successful at completely removing the band.	SI	Constricting entanglement	Marine debris (packing band)	N/A	N/A	N/A	P8a	1	0
NPGOP	5/15/2018	BS	Northern Fur Seal	Eastern Pacific	DEAD	A male northern fur seal was caught and killed by BSAI flatfish trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI flatfish trawl	Commercial	Trawl	N/A	1	1
AKRO	6/1/2018	BS	Northern Fur Seal	Eastern Pacific	SI	An adult male northern fur seal was observed with a circumferential neck entanglement caused by a green net.	SI	Constricting entanglement	Marine debris	N/A	N/A	N/A	P8a	1	0
NPGOP	6/1/2018	BS	Northern Fur Seal	Eastern Pacific	DEAD	A male northern fur seal was caught and killed by BSAI flatfish trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI flatfish trawl	Commercial	Trawl	N/A	1	1
AKRO	7/11/2018	BS	Northern Fur Seal	Eastern Pacific	SI	An adult female northern fur seal was observed with a circumferential neck entanglement caused by a yellow line.	SI	Constricting entanglement	Marine debris	N/A	N/A	N/A	P8a	1	0
AKRO	7/14/2018	BS	Northern Fur Seal	Eastern Pacific	SI	An adult male northern fur seal was observed with a circumferential neck entanglement caused by an unknown material / marine debris.	SI	Constricting entanglement	Marine debris (unidentified)	N/A	N/A	N/A	P8a	1	0
AKRO	7/14/2018	BS	Northern Fur Seal	Eastern Pacific	SI	A subadult male northern fur seal was observed with a circumferential neck entanglement caused by a green net.	SI	Constricting entanglement	Marine debris	N/A	N/A	N/A	P8a	1	0
AKRO	7/14/2018	BS	Northern Fur Seal	Eastern Pacific	SI	A subadult male northern fur seal was observed with a circumferential neck entanglement caused by a blue packing band. This animal was captured and disentangled.	NSI	Constricting entanglement	Marine debris (packing band)	N/A	N/A	N/A	P7b	0	0
AKRO	7/19/2018	BS	Northern Fur Seal	Eastern Pacific	SI	A subadult male northern fur seal was observed with a circumferential neck entanglement caused by an unknown material / marine debris.	SI	Constricting entanglement	Marine debris (unidentified)	N/A	N/A	N/A	P8a	1	0
AKRO	7/24/2018	BS	Northern Fur Seal	Eastern Pacific	SI	An adult male northern fur seal was observed with a circumferential neck entanglement caused by green trawl net. The seal was captured and disentangled successfully. The green trawl net had cut deep into the neck area (about 180° around) and was bleeding heavily. Eventually the seal made its way into the water and swam away.	SI	Constricting entanglement	Fishery gear	AK BSAI unknown trawl	Commercial	Trawl	P7b	1	0

Appendix Table 1.1 -- Human-marine mammal interaction records reviewed for injury and mortality, 2015-2019.

AKRO	8/15/2018	BS	Northern Fur Seal	Eastern Pacific	SI	A subadult male northern fur seal was observed with a circumferential neck entanglement caused by a rubber band.	SI	Constricting entanglement	Marine debris (rubber band)	N/A	N/A	N/A	P8a	1	0
AKRO	9/17/2018	BS	Northern Fur Seal	Eastern Pacific	SI	A subadult male northern fur seal was observed with a circumferential neck entanglement caused by braided green netting. This animal was captured and disentangled.	NSI	Constricting entanglement	Marine debris	N/A	N/A	N/A	P7b	0	0
AKRO	9/19/2018	BS	Northern Fur Seal	Eastern Pacific	SI	A subadult male northern fur seal was observed with a circumferential neck entanglement caused by twisted blue-green netting. This animal was captured and disentangled.	NSI	Constricting entanglement	Marine debris	N/A	N/A	N/A	P7b	0	0
AKRO	9/19/2018	BS	Northern Fur Seal	Eastern Pacific	SI	A subadult male northern fur seal was observed with a circumferential neck entanglement caused by braided green netting. This animal was captured and disentangled.	NSI	Constricting entanglement	Marine debris	N/A	N/A	N/A	P7b	0	0
AKRO	9/19/2018	BS	Northern Fur Seal	Eastern Pacific	SI	A subadult male northern fur seal was observed with a circumferential neck entanglement caused by twisted gray netting. This animal was captured and disentangled.	NSI	Constricting entanglement	Marine debris	N/A	N/A	N/A	P7b	0	0
AKRO	9/19/2018	BS	Northern Fur Seal	Eastern Pacific	SI	A subadult male northern fur seal was observed with a circumferential neck entanglement caused by a blue packing band. This animal was captured and disentangled.	NSI	Constricting entanglement	Marine debris (packing band)	N/A	N/A	N/A	P7b	0	0
AKRO	9/19/2018	BS	Northern Fur Seal	Eastern Pacific	SI	A subadult male northern fur seal was observed with a circumferential neck entanglement caused by twisted gray netting. This animal was captured and disentangled.	NSI	Constricting entanglement	Marine debris	N/A	N/A	N/A	P7b	0	0
AKRO	11/6/2018	BS	Northern Fur Seal	Eastern Pacific	SI	A subadult male northern fur seal was observed with a circumferential neck entanglement caused by a black packing band. This animal was captured and disentangled.	NSI	Constricting entanglement	Marine debris (packing band)	N/A	N/A	N/A	P7b	0	0
NPGOP	2/27/2019	BS	Northern Fur Seal	Eastern Pacific	DEAD	A male northern fur seal was caught and killed by AK BSAI flatfish trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI flatfish trawl	Commercial	Trawl	N/A	1	1
NPGOP	5/9/2019	BS	Northern Fur Seal	Eastern Pacific	DEAD	A female northern fur seal was caught and killed by AK BSAI flatfish trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI flatfish trawl	Commercial	Trawl	N/A	1	1
NPGOP	5/10/2019	BS	Northern Fur Seal	Eastern Pacific	DEAD	A male northern fur seal was caught and killed by AK BSAI flatfish trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI flatfish trawl	Commercial	Trawl	N/A	1	1
NPGOP	5/12/2019	BS	Northern Fur Seal	Eastern Pacific	DEAD	A male juvenile northern fur seal was caught and killed by AK BSAI flatfish trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI flatfish trawl	Commercial	Trawl	N/A	1	1
NPGOP	5/12/2019	BS	Northern Fur Seal	Eastern Pacific	DEAD	A male northern fur seal was caught and killed by AK BSAI flatfish trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI flatfish trawl	Commercial	Trawl	N/A	1	1
NPGOP	5/14/2019	BS	Northern Fur Seal	Eastern Pacific	DEAD	A male northern fur seal was caught and killed by AK BSAI flatfish trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI flatfish trawl	Commercial	Trawl	N/A	1	1
NPGOP	5/16/2019	BS	Northern Fur Seal	Eastern Pacific	DEAD	A female northern fur seal was caught and killed by AK BSAI flatfish trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI flatfish trawl	Commercial	Trawl	N/A	1	1
NPGOP	5/28/2019	BS	Northern Fur Seal	Eastern Pacific	DEAD	A male northern fur seal was caught and killed by AK BSAI flatfish trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI flatfish trawl	Commercial	Trawl	N/A	1	1
NPGOP	5/29/2019	BS	Northern Fur Seal	Eastern Pacific	DEAD	A male northern fur seal was caught and killed by AK BSAI flatfish trawl gear during an unsampled haul.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI flatfish trawl	Commercial	Trawl	N/A	1	1
NPGOP	6/1/2019	BS	Northern Fur Seal	Eastern Pacific	DEAD	A male northern fur seal was caught and killed by AK BSAI flatfish trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI flatfish trawl	Commercial	Trawl	N/A	1	1

Appendix Table 1.1 -- Human-marine mammal interaction records reviewed for injury and mortality, 2015-2019.

NPGOP	6/6/2019	BS	Northern Fur Seal	Eastern Pacific	DEAD	A male northern fur seal was caught and killed by AK BSAI flatfish trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI flatfish trawl	Commercial	Trawl	N/A	1	1
AKRO	6/25/2019	BS	Northern Fur Seal	Eastern Pacific	SI	A subadult male northern fur seal was observed with a constricting circumferential neck entanglement caused by a white packing band.	SI	Constricting entanglement	Marine debris (packing band)	N/A	N/A	N/A	P8a	1	0
AKRO	6/25/2019	BS	Northern Fur Seal	Eastern Pacific	SI	A subadult male northern fur seal was observed with a constricting circumferential neck entanglement caused by a packing band. The animal was captured and disentangled.	NSI	Constricting entanglement	Marine debris (packing band)	N/A	N/A	N/A	P7b	0	0
AKRO	6/26/2019	BS	Northern Fur Seal	Eastern Pacific	SI	An adult male northern fur seal was observed with a constricting circumferential neck entanglement caused by unknown marine debris.	SI	Constricting entanglement	Marine debris (unidentified)	N/A	N/A	N/A	P8a	1	0
ADFG	7/8/2019	SEAK	Northern Fur Seal	Eastern Pacific	SI	A northern fur seal was observed with a circumferential neck entanglement caused by a thick blue packing band.	SI	Constricting entanglement	Marine debris (packing band)	N/A	N/A	N/A	P8a	1	0
AKRO	7/17/2019	BS	Northern Fur Seal	Eastern Pacific	SI	A subadult male northern fur seal was observed with an open wound encircling sections of the dorsal and ventral neck. The entangling material was not visible around the animal's neck but the animal was not confirmed to be free of any entangling material.	SI	Constricting entanglement	Marine debris (unidentified)	N/A	N/A	N/A	P8a	1	0
AKRO	7/22/2019	BS	Northern Fur Seal	Eastern Pacific	SI	A subadult male northern fur seal was observed with a constricting circumferential neck entanglement caused by a green trawl net with some white line interwoven.	SI	Constricting entanglement	Fishery gear	Unknown trawl	Unknown	Trawl	P8a	1	0
AKRO	7/24/2019	BS	Northern Fur Seal	Eastern Pacific	SI	A subadult male northern fur seal was observed with a constricting circumferential neck entanglement caused by a green trawl net with some white line interwoven. The animal was captured and disentangled.	NSI	Constricting entanglement	Fishery gear	Unknown trawl	Unknown	Trawl	P7b	0	0
AKRO	7/31/2019	BS	Northern Fur Seal	Eastern Pacific	SI	A subadult male northern fur seal was observed with a constricting circumferential neck entanglement caused by a white packing band. The animal was captured and disentangled.	NSI	Constricting entanglement	Marine debris (packing band)	N/A	N/A	N/A	P7b	0	0
AKRO	7/31/2019	BS	Northern Fur Seal	Eastern Pacific	SI	A subadult male northern fur seal was observed with a constricting circumferential neck entanglement caused by a gray trawl net. The animal was captured and disentangled.	NSI	Constricting entanglement	Fishery gear	Unknown trawl	Unknown	Trawl	P7b	0	0
AKRO	8/2/2019	BS	Northern Fur Seal	Eastern Pacific	SI	A subadult male northern fur seal was observed with a constricting circumferential neck entanglement caused by a green trawl net. The animal was captured and disentangled.	NSI	Constricting entanglement	Fishery gear	Unknown trawl	Unknown	Trawl	P7b	0	0
AKRO	8/2/2019	BS	Northern Fur Seal	Eastern Pacific	SI	A subadult male northern fur seal was observed with a constricting circumferential neck entanglement caused by a black string. The animal was captured and disentangled.	NSI	Constricting entanglement	Marine debris	N/A	N/A	N/A	P7b	0	0
AKRO	8/5/2019	BS	Northern Fur Seal	Eastern Pacific	SI	A subadult male northern fur seal was observed with a constricting circumferential neck entanglement caused by unknown marine debris.	SI	Constricting entanglement	Marine debris (unidentified)	N/A	N/A	N/A	P8a	1	0
AKRO	8/22/2019	BS	Northern Fur Seal	Eastern Pacific	SI	A subadult male northern fur seal was observed with a constricting circumferential neck entanglement caused by a green trawl net.	SI	Constricting entanglement	Fishery gear	Unknown trawl	Unknown	Trawl	P8a	1	0

Appendix Table 1.1 -- Human-marine mammal interaction records reviewed for injury and mortality, 2015-2019.

AKRO	8/22/2019	BS	Northern Fur Seal	Eastern Pacific	SI	A subadult male northern fur seal was observed with a constricting circumferential neck entanglement caused by a 1/2-inch diameter orange braided line.	SI	Constricting entanglement	Marine debris (rope)	N/A	N/A	N/A	P8a	1	0
AKRO	8/22/2019	BS	Northern Fur Seal	Eastern Pacific	SI	A subadult male northern fur seal was observed with a constricting circumferential neck entanglement caused by a green fishing net. The animal was captured and disentangled.	NSI	Constricting entanglement	Fishery gear	Unknown trawl	Unknown	Trawl	P7b	0	0
AKRO	8/25/2019	BS	Northern Fur Seal	Eastern Pacific	SI	A subadult male northern fur seal was observed with a constricting circumferential neck entanglement caused by an orange trawl net.	SI	Constricting entanglement	Fishery gear	Unknown trawl	Unknown	Trawl	P8a	1	0
AKRO	8/25/2019	BS	Northern Fur Seal	Eastern Pacific	SI	A subadult male northern fur seal was observed with a constricting circumferential neck entanglement caused by a green trawl net.	SI	Constricting entanglement	Fishery gear	Unknown trawl	Unknown	Trawl	P8a	1	0
AKRO	8/29/2019	BS	Northern Fur Seal	Eastern Pacific	SI	A subadult male northern fur seal was observed with a constricting circumferential neck entanglement caused by a 2-inch wide polyester belt. The animal was captured and disentangled.	NSI	Constricting entanglement	Marine debris (misc. plastic)	N/A	N/A	N/A	P7b	0	0
AKRO	8/31/2019	BS	Northern Fur Seal	Eastern Pacific	SI	A subadult male northern fur seal was observed with a constricting circumferential neck entanglement caused by a green and orange trawl net.	SI	Constricting entanglement	Fishery gear	Unknown trawl	Unknown	Trawl	P8a	1	0
AKRO	9/8/2019	BS	Northern Fur Seal	Eastern Pacific	SI	An adult female northern fur seal was observed with a constricting circumferential neck entanglement caused by a green trawl net.	SI	Constricting entanglement	Fishery gear	Unknown trawl	Unknown	Trawl	P8a	1	0
AKRO	9/20/2019	BS	Northern Fur Seal	Eastern Pacific	SI	A subadult male northern fur seal was observed with a constricting circumferential neck entanglement caused by a green trawl net. The animal was captured and disentangled.	NSI	Constricting entanglement	Fishery gear	Unknown trawl	Unknown	Trawl	P7b	0	0
AKRO	9/20/2019	BS	Northern Fur Seal	Eastern Pacific	SI	A subadult male northern fur seal was observed with a constricting circumferential neck entanglement caused by a yellow fishing line. The animal was captured and disentangled.	NSI	Constricting entanglement	Fishery gear	Unknown hook and line	Unknown	Hook and line	P7b	0	0
AKRO	9/20/2019	BS	Northern Fur Seal	Eastern Pacific	SI	A subadult male northern fur seal was observed with a constricting circumferential neck entanglement caused by a blue packing band.	SI	Constricting entanglement	Marine debris (packing band)	N/A	N/A	N/A	P8a	1	0
AKRO	9/20/2019	BS	Northern Fur Seal	Eastern Pacific	SI	A subadult male northern fur seal was observed with a constricting circumferential neck entanglement caused by monofilament line.	SI	Constricting entanglement	Fishery gear	Unknown hook and line	Unknown	Hook and line	P8a	1	0
AKRO	9/21/2019	BS	Northern Fur Seal	Eastern Pacific	SI	A subadult male northern fur seal was observed with a constricting circumferential neck entanglement caused by an orange braided trawl strand net. The animal was captured and disentangled.	NSI	Constricting entanglement	Fishery gear	Unknown trawl	Unknown	Trawl	P7b	0	0
AKRO	9/21/2019	BS	Northern Fur Seal	Eastern Pacific	SI	A subadult male northern fur seal was observed with a constricting circumferential neck entanglement caused by a green twisted net with some white line interwoven. The animal was captured and disentangled.	NSI	Constricting entanglement	Fishery gear	Unknown trawl	Unknown	Trawl	P7b	0	0

Appendix Table 1.1 -- Human-marine mammal interaction records reviewed for injury and mortality, 2015-2019.

AKRO	11/7/2019	BS	Northern Fur Seal	Eastern Pacific	SI	A subadult male northern fur seal was observed with a constricting circumferential neck entanglement caused by a green trawl net. The animal was captured and disentangled.	NSI	Constricting entanglement	Fishery gear	Unknown trawl	Unknown	Trawl	P7b	0	0
AKRO	11/10/2019	BS	Northern Fur Seal	Eastern Pacific	SI	A subadult male northern fur seal was observed with a constricting circumferential neck entanglement caused by a green trawl net. The animal was captured and disentangled.	NSI	Constricting entanglement	Fishery gear	Unknown trawl	Unknown	Trawl	P7b	0	0
SWFSC	12/3/2016	WC	Northern Fur Seal	Eastern Pacific, California	DEAD	A pup was necropsied and the cause of death was determined to be a canine attack.	DEAD	Body trauma	Other	N/A	N/A	N/A	P9	1	0
WCRO	3/4/2017	WC	Northern Fur Seal	Eastern Pacific, California	DEAD	A northern fur seal was found dead with a section of bottom trawl net around its neck. The seal had a hemorrhage on the right side of its neck, its right eye was full of blood (the left eye was normal), there was bloody fluid in the thoracic cavity and damage to its skull, and it was emaciated.	DEAD	Constricting entanglement	Fishery gear	Unknown trawl	Unknown	Trawl	N/A	1	0
WCRO	3/8/2017	WC	Northern Fur Seal	Eastern Pacific, California	DEAD	Two juvenile northern fur seals were found dead and entangled in green trawl net. This record represents 1 of 2.	DEAD	Constricting entanglement	Fishery gear	Unknown trawl	Unknown	Trawl	N/A	1	0
WCRO	3/8/2017	WC	Northern Fur Seal	Eastern Pacific, California	DEAD	Two juvenile northern fur seals were found dead and entangled in green trawl net. This record represents 2 of 2.	DEAD	Constricting entanglement	Fishery gear	Unknown trawl	Unknown	Trawl	N/A	1	0
WCRO	1/22/2018	WC	Northern Fur Seal	Eastern Pacific, California	SI	A male northern fur seal pup was found with a circumferential neck entanglement. This animal was transferred briefly to Oregon Coast Aquarium where it was disentangled, held overnight, and released the next day at Yaquina Head Outstanding Natural Area, just north of Newport, OR.	NSI	Constricting entanglement	Marine debris (misc. plastic)	N/A	N/A	N/A	P7b	0	0
NPGOP	4/7/2019	BS	Pacific White Sided Dolphin	North Pacific	DEAD	Two female Pacific white-sided dolphins were caught and killed by AK BSAI pollock trawl gear. This record represents 2 of 2.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI pollock trawl	Commercial	Trawl	N/A	1	1
NPGOP	4/7/2019	BS	Pacific White Sided Dolphin	North Pacific	DEAD	Two female Pacific white-sided dolphins were caught and killed by AK BSAI pollock trawl gear. This record represents 1 of 2.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI pollock trawl	Commercial	Trawl	N/A	1	1
NPGOP	8/24/2016	BS	Ribbon Seal	Alaska	DEAD	A ribbon seal was caught and killed in trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI pollock trawl	Commercial	Trawl	N/A	1	1
NPGOP	2/2/2015	WAK	Ringed Seal	Alaska	DEAD	A ringed seal was caught and killed in AK BSAI flatfish trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI flatfish trawl	Commercial	Trawl	N/A	1	1
NMFS OPR/HQ	7/2/2016	Arctic	Ringed Seal	Alaska	DEAD	A female ringed seal was incidentally killed during MMPA authorized research.	DEAD	Research related injury	MMPA authorized research	N/A	N/A	N/A	N/A	1	0
NPGOP	3/2/2017	BS	Ringed Seal	Alaska	DEAD	A female ringed seal was caught and killed by AK BSAI flatfish trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI flatfish trawl	Commercial	Trawl	N/A	1	1
NPGOP	3/9/2017	BS	Ringed Seal	Alaska	DEAD	A female ringed seal was caught and killed by AK BSAI flatfish trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI flatfish trawl	Commercial	Trawl	N/A	1	1
NPGOP	3/10/2017	BS	Ringed Seal	Alaska	DEAD	A female ringed seal was caught and killed by AK BSAI flatfish trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI flatfish trawl	Commercial	Trawl	N/A	1	1
NPGOP	3/17/2017	BS	Ringed Seal	Alaska	DEAD	A female ringed seal was caught and killed by AK BSAI flatfish trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI flatfish trawl	Commercial	Trawl	N/A	1	1
NPGOP	3/22/2017	BS	Ringed Seal	Alaska	DEAD	A male ringed seal was caught and killed by AK BSAI pollock trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI pollock trawl	Commercial	Trawl	N/A	1	1
NPGOP	4/15/2017	BS	Ringed Seal	Alaska	DEAD	A male ringed seal was caught and killed by AK BSAI flatfish trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI flatfish trawl	Commercial	Trawl	N/A	1	1

Appendix Table 1.1 -- Human-marine mammal interaction records reviewed for injury and mortality, 2015-2019.

NPGOP	4/22/2017	BS	Ringed Seal	Alaska	DEAD	A male ringed seal was caught and killed by AK BSAI flatfish trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI flatfish trawl	Commercial	Trawl	N/A	1	1
NPGOP	5/23/2017	BS	Ringed Seal	Alaska	DEAD	A male ringed seal was caught and killed by AK BSAI flatfish trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI flatfish trawl	Commercial	Trawl	N/A	1	1
AKRO	8/3/2017	Arctic	Ringed Seal	Alaska	DEAD	An adult female ringed seal was found dead from apparent drowning (gas bubbles in blood vessel). The seal had a line impression around the snout consistent with entanglement from an unidentified material.	DEAD	Entangled / entrapped	Marine debris (unidentified)	N/A	N/A	N/A	N/A	1	0
NPGOP	11/13/2017	BS	Ringed Seal	Alaska	DEAD	A male ringed seal was caught and killed by AK BSAI flatfish trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI flatfish trawl	Commercial	Trawl	N/A	1	1
NPGOP	3/26/2018	BS	Ringed Seal	Alaska	DEAD	A female ringed seal was caught and killed by BSAI flatfish trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI flatfish trawl	Commercial	Trawl	N/A	1	1
NPGOP	4/26/2018	BS	Ringed Seal	Alaska	DEAD	A female ringed seal was caught and killed by BSAI flatfish trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI flatfish trawl	Commercial	Trawl	N/A	1	1
NPGOP	4/30/2018	BS	Ringed Seal	Alaska	DEAD	A female ringed seal was caught and killed by BSAI flatfish trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI flatfish trawl	Commercial	Trawl	N/A	1	1
NPGOP	5/6/2018	BS	Ringed Seal	Alaska	DEAD	A female ringed seal pup was caught and killed by BSAI flatfish trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI flatfish trawl	Commercial	Trawl	N/A	1	1
NPGOP	5/10/2018	BS	Ringed Seal	Alaska	DEAD	A female ringed seal was caught and killed by BSAI flatfish trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI flatfish trawl	Commercial	Trawl	N/A	1	1
NPGOP	5/13/2018	BS	Ringed Seal	Alaska	DEAD	A male ringed seal was caught and killed by BSAI flatfish trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI flatfish trawl	Commercial	Trawl	N/A	1	1
NPGOP	5/15/2018	BS	Ringed Seal	Alaska	DEAD	A female ringed seal was caught and killed by BSAI flatfish trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI flatfish trawl	Commercial	Trawl	N/A	1	1
NPGOP	5/18/2018	BS	Ringed Seal	Alaska	DEAD	A female ringed seal was caught and killed by BSAI flatfish trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI flatfish trawl	Commercial	Trawl	N/A	1	1
NPGOP	5/18/2018	BS	Ringed Seal	Alaska	DEAD	A male ringed seal was caught and killed by BSAI flatfish trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI flatfish trawl	Commercial	Trawl	N/A	1	1
NPGOP	5/22/2018	BS	Ringed Seal	Alaska	DEAD	A female ringed seal was caught and killed by BSAI flatfish trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI flatfish trawl	Commercial	Trawl	N/A	1	1
NPGOP	5/22/2018	BS	Ringed Seal	Alaska	DEAD	A female ringed seal was caught and killed by BSAI flatfish trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI flatfish trawl	Commercial	Trawl	N/A	1	1
NPGOP	5/23/2018	BS	Ringed Seal	Alaska	DEAD	A ringed seal was caught and killed by BSAI flatfish trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI flatfish trawl	Commercial	Trawl	N/A	1	1
NPGOP	5/24/2018	BS	Ringed Seal	Alaska	DEAD	A female ringed seal was caught and killed by BSAI flatfish trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI flatfish trawl	Commercial	Trawl	N/A	1	1
NPGOP	6/1/2018	BS	Ringed Seal	Alaska	DEAD	A female ringed seal was caught and killed by BSAI flatfish trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI flatfish trawl	Commercial	Trawl	N/A	1	1
NPGOP	3/2/2019	BS	Ringed Seal	Alaska	DEAD	A female ringed seal was caught and killed by AK BSAI flatfish trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI flatfish trawl	Commercial	Trawl	N/A	1	1
NPGOP	11/19/2019	BS	Ringed Seal	Alaska	DEAD	A female ringed seal was caught and killed by AK BSAI flatfish trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI flatfish trawl	Commercial	Trawl	N/A	1	1
NPGOP	4/3/2015	GOA	Sperm Whale	North Pacific	NSI	A sperm whale was observed near the fishing vessel and entangled in AK GOA sablefish longline gear. The line parted when the whale dove. The fisherman then hauled the gear in from the other end. All gear was reported to be retrieved and the animal was reported to be free of any gear. This qualifies as a non-serious injury under criterion L3 because the animal is believed to be have become fully disentangled shortly after the initial entanglement and there is no additional evidence of injury.	NSI	Entangled / entrapped	Fishery gear	AK GOA sablefish longline	Commercial	Longline	L3	0	0

Appendix Table 1.1 -- Human-marine mammal interaction records reviewed for injury and mortality, 2015-2019.

NPGOP	6/11/2015	WAK	Sperm Whale	North Pacific	PRORATE	One of four sperm whales observed in the vicinity of a fishing vessel was reported to be entangled in AK BSAI halibut longline gear. The observer reported that the whale was on the surface approximately 30 m from the vessel. The gear that led straight to the whale began to get tighter as the distance between the vessel and the whale closed. In response, the captain cut the ground line. It was not reported how much gear was potentially attached to the whale. This interaction is prorated under SI criterion L10 due to the unknown nature of the entanglement and unknown outcome.	PRORATE	Entangled / entrapped	Fishery gear	AK BSAI halibut longline	Commercial	Longline	L10	0.75	0.75
NPGOP	5/18/2016	GOA	Sperm Whale	North Pacific	PRORATE	An AK GOA sablefish longliner was retrieving gear when a sperm whale was observed entangled in the longline. In response, the vessel began retrieving from the other end of the line to retrieve the remaining gear. After all gear was brought aboard, three skates of gear were determined to be missing, and the observer noted the gear had been moved 2.5 miles from where it was originally set. The outcome of this interaction is prorated under criterion L10 due to the unknown final configuration of the entanglement.	PRORATE	Entangled / entrapped	Fishery gear	AK GOA sablefish longline	Commercial	Longline	L10	0.75	0.75
AKRO	6/7/2017	BS	Sperm Whale	North Pacific	SI	A subadult sperm whale was struck by a 378 ft USCG vessel traveling at 24 knots. The impact led to significant bleeding, behavioral changes, and wounds on the head, back, and pectoral fin. The whale was observed and documented following the strike until it died. L6a and L5a were both applicable criteria in this case.	DEAD	Ship strike	Vessel (government)	N/A	N/A	N/A	L6a	1	0
NPGOP	4/21/2018	BS	Sperm Whale	North Pacific	DEAD	A sperm whale was caught and killed by AK BSAI sablefish pot gear during an unsampled haul.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI sablefish pot	Commercial	Pot	N/A	1	1
AKRO	3/19/2019	SEAK	Sperm Whale	North Pacific	DEAD	A subadult male sperm whale was found dead on the beach in a state of advanced decomposition. A necropsy found that the whale had three deep, clean, parallel slices on the back from the cranium to the dorsal fin, with jumbled vertebrae that had many large and small fractures. The spinal cord was exposed and there were significant associated soft tissue injuries.	DEAD	Ship strike	Vessel (unknown)	N/A	N/A	N/A	N/A	1	0
NPGOP	5/8/2019	GOA	Sperm Whale	North Pacific	PRORATE	A sperm whale was observed interacting with AK GOA sablefish longline gear. During gear haulback, the line became taut and a sperm whale surfaced next to the vessel. After 1 minute, the line parted and the whale swam below the surface and was not seen again. This suggests the animal was attached to the gear in some way, either hooked or entangled. The observer was unable to see the whale's whole body, so cannot confirm a lack of entanglement/hooksing, configuration of entanglement (if any), or location of hooking (if any). It is unknown how much gear was lost, so the amount of gear potentially still attached to the animal cannot be estimated.	PRORATE	Entangled / entrapped	Fishery gear	AK GOA sablefish longline	Commercial	Longline	L10	0.75	0.75
NPGOP	5/23/2015	BS	Spotted Seal	Alaska	DEAD	A spotted seal was caught and killed by AK BSAI flatfish trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI flatfish trawl	Commercial	Trawl	N/A	1	1

Appendix Table 1.1 -- Human-marine mammal interaction records reviewed for injury and mortality, 2015-2019.

NPGOP	6/2/2015	WAK	Spotted Seal	Alaska	DEAD	A spotted seal was caught and killed in AK BSAI flatfish trawl gear	DEAD	Entangled / entrapped	Fishery gear	AK BSAI flatfish trawl	Commercial	Trawl	N/A	1	1
NPGOP	5/4/2016	BS	Spotted Seal	Alaska	DEAD	A spotted seal was caught and killed by trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI flatfish trawl	Commercial	Trawl	N/A	1	1
NMFS OPR/HQ	8/14/2016	Arctic	Spotted Seal	Alaska	DEAD	A male spotted seal was incidentally killed during MMPA authorized research.	DEAD	Research related injury	MMPA authorized research	N/A	N/A	N/A	N/A	1	0
NPGOP	5/19/2017	BS	Spotted Seal	Alaska	DEAD	A male spotted seal was caught and killed by AK BSAI flatfish trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI flatfish trawl	Commercial	Trawl	N/A	1	1
NPGOP	6/4/2017	BS	Spotted Seal	Alaska	DEAD	A male spotted seal was caught and killed by AK BSAI flatfish trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI flatfish trawl	Commercial	Trawl	N/A	1	1
NPGOP	4/13/2019	BS	Spotted Seal	Bering	DEAD	A male spotted seal was caught and killed by AK BSAI flatfish trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI flatfish trawl	Commercial	Trawl	N/A	1	1
WCRO	1/12/2015	WC	Steller Sea Lion	Eastern US	SI	A subadult male Steller sea lion that had ingested hook and line fishery gear was observed at Sea Lion Caves. A red flasher was hanging from its mouth.	SI	Hooked	Fishery gear	Unknown hook and line	Unknown	Hook and line	P2	1	0
WCGOP	1/29/2015	WC	Steller Sea Lion	Eastern US	DEAD	Two Steller sea lions were caught and killed by OA CA halibut bottom trawl gear. This record represents sea lion 1 of 2.	DEAD	Entangled / entrapped	Fishery gear	OA CA halibut bottom trawl	Commercial	Trawl	N/A	1	1
WCGOP	1/29/2015	WC	Steller Sea Lion	Eastern US	DEAD	Two Steller sea lions were caught and killed by OA CA halibut bottom trawl gear. This record represents sea lion 2 of 2.	DEAD	Entangled / entrapped	Fishery gear	OA CA halibut bottom trawl	Commercial	Trawl	N/A	1	1
SWFSC	1/31/2015	WC	Steller Sea Lion	Eastern US	DEAD	A Steller sea lion was found dead with multiple gunshot wounds.	DEAD	Shot	Projectile weapon	N/A	N/A	N/A	N/A	1	0
WCRO	2/12/2015	WC	Steller Sea Lion	Eastern US	SI	An adult male Steller sea lion was observed with some type of bright orange material with a small buoy attached to it. This gear was wrapped around the animal's neck. The animal was not sighted again.	SI	Constricting entanglement	Marine debris (rope and buoy)	N/A	N/A	N/A	P8a	1	0
WCGOP	2/12/2015	WC	Steller Sea Lion	Eastern US	DEAD	A Steller sea lion was caught and killed in trawl gear.	DEAD	Entangled / entrapped	Fishery gear	OA CA halibut bottom trawl	Commercial	Trawl	N/A	1	1
WCRO	2/25/2015	WC	Steller Sea Lion	Eastern US	DEAD	A robust subadult male Steller sea lion was found dead. Upon examination, pellets were found in the animal's body cavity and internal organs.	DEAD	Shot	Projectile weapon	N/A	N/A	N/A	N/A	1	0
WCGOP	3/8/2015	WC	Steller Sea Lion	Eastern US	NSI	A Steller sea lion was caught in trawl gear and brought aboard the fishing vessel. The animal left the boat after being freed from the net.	NSI	Entangled / entrapped	Fishery gear	Catch shares bottom trawl	Commercial	Trawl	P4	0	0
WCRO	4/4/2015	WC	Steller Sea Lion	Eastern US	DEAD	An adult female Steller sea lion was found dead with track-associated hemorrhages in various areas of its body. A projectile was recovered from the body.	DEAD	Shot	Projectile weapon	N/A	N/A	N/A	N/A	1	0
WCRO	4/8/2015	WC	Steller Sea Lion	Eastern US	DEAD	An adult female Steller sea lion was found dead with numerous areas of hemorrhage throughout its body. A projectile was recovered from the body.	DEAD	Shot	Projectile weapon	N/A	N/A	N/A	N/A	1	0
WCRO	4/11/2015	WC	Steller Sea Lion	Eastern US	DEAD	A dead subadult female Steller sea lion was found with tracking wounds, hemorrhaging associated with the wound tracks, and bloody fluid in the abdomen. No projectiles were recovered.	DEAD	Shot	Projectile weapon	N/A	N/A	N/A	N/A	1	0
AKRO	4/14/2015	SEAK	Steller Sea Lion	Eastern US	SI	An adult female Steller sea lion was observed with a circumferential neck entanglement that was thought to be caused by a white packing band.	SI	Constricting entanglement	Marine debris (packing band)	N/A	N/A	N/A	P8a	1	0

Appendix Table 1.1 -- Human-marine mammal interaction records reviewed for injury and mortality, 2015-2019.

WCRO	4/23/2015	WC	Steller Sea Lion	Eastern US	DEAD	An adult male Steller sea lion was found dead. There were several areas of hemorrhaging throughout the body and a projectile was recovered from the animal's head.	DEAD	Shot	Projectile weapon	N/A	N/A	N/A	N/A	1	0
ODFW	5/5/2015	WC	Steller Sea Lion	Eastern US	DEAD	A Steller sea lion was accidentally killed during pinniped research and management activities at the Bonneville Dam.	DEAD	Entangled / entrapped	Other	N/A	N/A	N/A	N/A	1	0
WCRO	5/9/2015	WC	Steller Sea Lion	Eastern US	SI	An adult female Steller sea lion was observed hauled out on an offshore rock with a large flasher hanging from its mouth.	SI	Hooked	Fishery gear	Unknown hook and line	Unknown	Hook and line	P2	1	0
WCRO	5/11/2015	WC	Steller Sea Lion	Eastern US	SI	An adult female Steller sea lion ingested hook and line fishery gear; a flasher was hanging from its mouth. The animal appeared to be thin and had a newborn pup with it. This record represents the mother.	SI	Hooked	Fishery gear	Unknown hook and line	Unknown	Hook and line	P2	1	0
WCRO	5/11/2015	WC	Steller Sea Lion	Eastern US	SI	An adult female Steller sea lion ingested hook and line fishery gear; a flasher was observed hanging from its mouth. The animal appeared to be thin and had a newborn pup with it. This record represents the pup.	SI	Dependent animal with mother seriously injured	Fishery gear	Unknown hook and line	Unknown	Hook and line	P14	1	0
WCRO	5/13/2015	WC	Steller Sea Lion	Eastern US	DEAD	A subadult male Steller sea lion was found dead with numerous hemorrhagic areas in the body that were associated with obvious tracks and holes. A projectile was recovered.	DEAD	Shot	Projectile weapon	N/A	N/A	N/A	N/A	1	0
AKRO	5/17/2015	SEAK	Steller Sea Lion	Eastern US	SI	A Steller sea lion was observed with a circumferential neck entanglement caused by some type of unidentified plastic.	SI	Constricting entanglement	Marine debris (unidentified)	N/A	N/A	N/A	P8a	1	0
WCGOP	5/18/2015	WC	Steller Sea Lion	Eastern US	SI	A fisherman was reported to fire one shot of a rifle at a group of six sea lions. The observer was unsure if any were hit. Out of caution it is assumed a sea lion was injured by the gunshot.	SI	Shot	Projectile weapon	Catch shares bottom trawl	Commercial	Trawl	P9	1	1
WCRO	5/19/2015	WC	Steller Sea Lion	Eastern US	SI	A member of the public reported seeing someone shoot a Steller sea lion that was hauled out on a buoy. The reporting party indicated that the animal was "badly wounded."	SI	Shot	Projectile weapon	N/A	N/A	N/A	P9	1	0
ADFG	5/20/2015	SEAK	Steller Sea Lion	Eastern US	SI	An adult male Steller sea lion was observed with a constricting neck entanglement caused by a packing band.	SI	Constricting entanglement	Marine debris (packing band)	N/A	N/A	N/A	P8a	1	0
AKRO	5/24/2015	SEAK	Steller Sea Lion	Eastern US	SI	A Steller sea lion was observed to have "trash around his neck" by a whale watch vessel naturalist at Admiralty Island, AK.	SI	Constricting entanglement	Marine debris (unidentified)	N/A	N/A	N/A	P8a	1	0
ADFG	5/26/2015	SEAK	Steller Sea Lion	Eastern US	SI	An adult female Steller sea lion was observed with a constricting neck entanglement caused by unknown material / marine debris. The animal was reported with a pup. This record represents the mother.	SI	Constricting entanglement	Marine debris (unidentified)	N/A	N/A	N/A	P8a	1	0
ADFG	5/26/2015	SEAK	Steller Sea Lion	Eastern US	SI	An adult female Steller sea lion was observed with a constricting neck entanglement caused by unknown material / marine debris. The animal was reported with a pup. This record represents the pup.	SI	Dependent animal with mother seriously injured	Marine debris (unidentified)	N/A	N/A	N/A	P14	1	0
ADFG	6/8/2015	SEAK	Steller Sea Lion	Eastern US	SI	An adult female Steller sea lion was observed with a constricting neck entanglement caused by unknown material / marine debris.	SI	Constricting entanglement	Marine debris (unidentified)	N/A	N/A	N/A	P8a	1	0

Appendix Table 1.1 -- Human-marine mammal interaction records reviewed for injury and mortality, 2015-2019.

WCRO	6/9/2015	WC	Steller Sea Lion	Eastern US	DEAD	A robust adult female Steller sea lion was found dead. There were numerous areas of hemorrhage in the head and body. A projectile was recovered from the animal's head.	DEAD	Shot	Projectile weapon	N/A	N/A	N/A	N/A	1	0
AKRO	6/12/2015	SEAK	Steller Sea Lion	Eastern US	SI	A Steller sea lion was observed with a wound on its jaw and fishing line protruding from its mouth. It appeared that the sea lion ingested hook and line fishing gear of some type. The animal was very lethargic.	SI	Hooked	Fishery gear	Unknown hook and line	Unknown	Hook and line	P2	1	0
ADFG	6/18/2015	SEAK	Steller Sea Lion	Eastern US	SI	An adult female Steller sea lion was observed with a constricting neck entanglement caused by unknown material / marine debris.	SI	Constricting entanglement	Marine debris (unidentified)	N/A	N/A	N/A	P8a	1	0
ADFG	6/25/2015	SEAK	Steller Sea Lion	Eastern US	SI	An adult female Steller sea lion was observed with a constricting neck entanglement caused by unknown material / marine debris. The animal was reported with a pup. This record represents the mother.	SI	Constricting entanglement	Marine debris (unidentified)	N/A	N/A	N/A	P8a	1	0
ADFG	6/25/2015	SEAK	Steller Sea Lion	Eastern US	SI	An adult female Steller sea lion was observed with a constricting neck entanglement caused by unknown material / marine debris. The animal was reported with a pup. This record represents the pup.	SI	Dependent animal with mother seriously injured	Marine debris (unidentified)	N/A	N/A	N/A	P14	1	0
ADFG	6/27/2015	SEAK	Steller Sea Lion	Eastern US	SI	A Steller sea lion was observed with a flasher at the edge of its mouth.	SI	Hooked	Fishery gear	Salmon hook and line	Unknown	Hook and line	P2	1	0
ADFG	6/27/2015	SEAK	Steller Sea Lion	Eastern US	SI	An adult female Steller sea lion was observed with a constricting neck entanglement and severe wound caused by a packing band.	SI	Constricting entanglement	Marine debris (packing band)	N/A	N/A	N/A	P8a	1	0
ADFG	6/28/2015	SEAK	Steller Sea Lion	Eastern US	SI	A Steller sea lion was observed with a constricting neck entanglement caused by unknown material / marine debris. The animal was reported with a pup. This record represents the mother.	SI	Constricting entanglement	Marine debris (unidentified)	N/A	N/A	N/A	P8a	1	0
ADFG	6/28/2015	SEAK	Steller Sea Lion	Eastern US	SI	An adult female Steller sea lion was observed with a constricting neck entanglement caused by unidentified material. The animal was reported with a pup. This record represents the pup.	SI	Dependent animal with mother seriously injured	Marine debris (unidentified)	N/A	N/A	N/A	P14	1	0
ADFG	6/28/2015	SEAK	Steller Sea Lion	Eastern US	SI	A Steller sea lion was observed with a constricting neck entanglement caused by a packing band.	SI	Constricting entanglement	Marine debris (packing band)	N/A	N/A	N/A	P8a	1	0
ADFG	6/28/2015	SEAK	Steller Sea Lion	Eastern US	SI	An adult male Steller sea lion was observed with a constricting neck entanglement caused by unknown material / marine debris.	SI	Constricting entanglement	Marine debris (unidentified)	N/A	N/A	N/A	P8a	1	0
ADFG	6/28/2015	SEAK	Steller Sea Lion	Eastern US	SI	An adult female Steller sea lion was observed with a constricting neck entanglement caused by unknown material / marine debris.	SI	Constricting entanglement	Marine debris (unidentified)	N/A	N/A	N/A	P8a	1	0
WCRO	6/28/2015	WC	Steller Sea Lion	Eastern US	DEAD	An adult female Steller sea lion carcass was found in Newport, OR, with multiple penetrating wounds; one on the right cheek, three on the dorsum at the level of the shoulders, and two on the left lateral flank. The penetrating wounds were associated with a fractured zygomatic arch, an abscess in muscle, and 10 cm - 15 cm long tracts filled with fibrinous material.	DEAD	Shot	Projectile weapon	N/A	N/A	N/A	N/A	1	0
ADFG	6/29/2015	SEAK	Steller Sea Lion	Eastern US	SI	A subadult male Steller sea lion was observed with a flasher at the edge of its mouth.	SI	Hooked	Fishery gear	Salmon hook and line	Unknown	Hook and line	P2	1	0

Appendix Table 1.1 -- Human-marine mammal interaction records reviewed for injury and mortality, 2015-2019.

ADFG	6/29/2015	SEAK	Steller Sea Lion	Eastern US	SI	A Steller sea lion was observed with a constricting entanglement caused by unknown material / marine debris.	SI	Constricting entanglement	Marine debris (unidentified)	N/A	N/A	N/A	P8a	1	0
ADFG	6/29/2015	SEAK	Steller Sea Lion	Eastern US	SI	An adult female Steller sea lion was observed with a constricting entanglement caused by unknown material / marine debris.	SI	Constricting entanglement	Marine debris (unidentified)	N/A	N/A	N/A	P8a	1	0
ADFG	6/30/2015	SEAK	Steller Sea Lion	Eastern US	SI	A subadult male Steller sea lion was observed with a flasher at the edge of its mouth.	SI	Hooked	Fishery gear	Salmon hook and line	Unknown	Hook and line	P2	1	0
ADFG	6/30/2015	SEAK	Steller Sea Lion	Eastern US	SI	A Steller sea lion was observed with a constricting neck entanglement caused by unknown material / marine debris	SI	Constricting entanglement	Marine debris (unidentified)	N/A	N/A	N/A	P8a	1	0
ADFG	6/30/2015	SEAK	Steller Sea Lion	Eastern US	SI	An adult male Steller sea lion was observed with a constricting entanglement caused by unknown material / marine debris.	SI	Constricting entanglement	Marine debris (unidentified)	N/A	N/A	N/A	P8a	1	0
ADFG	7/3/2015	SEAK	Steller Sea Lion	Eastern US	SI	An adult male Steller sea lion was observed with a flasher at the edge of its mouth.	SI	Hooked	Fishery gear	Salmon hook and line	Unknown	Hook and line	P2	1	0
ADFG	7/3/2015	SEAK	Steller Sea Lion	Eastern US	SI	A subadult male Steller sea lion was observed with a flasher at the edge of its mouth.	SI	Hooked	Fishery gear	Salmon hook and line	Unknown	Hook and line	P2	1	0
ADFG	7/3/2015	SEAK	Steller Sea Lion	Eastern US	SI	A subadult Steller sea lion was observed with a flasher at the edge of its mouth.	SI	Hooked	Fishery gear	Salmon hook and line	Unknown	Hook and line	P2	1	0
ADFG	7/3/2015	SEAK	Steller Sea Lion	Eastern US	SI	A subadult male Steller sea lion was observed with a flasher at the edge of its mouth.	SI	Hooked	Fishery gear	Salmon hook and line	Unknown	Hook and line	P2	1	0
ADFG	7/3/2015	SEAK	Steller Sea Lion	Eastern US	SI	A subadult Steller sea lion was observed with a flasher at the edge of its mouth.	SI	Hooked	Fishery gear	Salmon hook and line	Unknown	Hook and line	P2	1	0
ADFG	7/3/2015	SEAK	Steller Sea Lion	Eastern US	SI	An adult male Steller sea lion was observed with a flasher at the edge of its mouth.	SI	Hooked	Fishery gear	Salmon hook and line	Unknown	Hook and line	P2	1	0
ADFG	7/3/2015	SEAK	Steller Sea Lion	Eastern US	SI	A subadult male Steller sea lion was observed with a flasher at the edge of its mouth.	SI	Hooked	Fishery gear	Salmon hook and line	Unknown	Hook and line	P2	1	0
ADFG	7/3/2015	SEAK	Steller Sea Lion	Eastern US	SI	An adult female Steller sea lion was observed with a circumferential neck entanglement caused by a packing band.	SI	Constricting entanglement	Marine debris (packing band)	N/A	N/A	N/A	P8a	1	0
ADFG	7/3/2015	SEAK	Steller Sea Lion	Eastern US	SI	An adult female Steller sea lion was observed with a constricting neck entanglement caused by a packing band.	SI	Constricting entanglement	Marine debris (packing band)	N/A	N/A	N/A	P8a	1	0
ADFG	7/4/2015	SEAK	Steller Sea Lion	Eastern US	SI	An adult male Steller sea lion was observed with a flasher at the edge of its mouth.	SI	Hooked	Fishery gear	Salmon hook and line	Unknown	Hook and line	P2	1	0
ADFG	7/5/2015	SEAK	Steller Sea Lion	Eastern US	SI	A subadult male Steller sea lion that was previously disentangled in 2014 was observed with a circumferential neck entanglement caused by unknown material / marine debris.	SI	Constricting entanglement	Marine debris (unidentified)	N/A	N/A	N/A	P8a	1	0
ADFG	7/5/2015	SEAK	Steller Sea Lion	Eastern US	SI	An adult male Steller sea lion was observed with a constricting neck entanglement caused by unknown material / marine debris.	SI	Constricting entanglement	Marine debris (unidentified)	N/A	N/A	N/A	P8a	1	0
ADFG	7/5/2015	SEAK	Steller Sea Lion	Eastern US	SI	A Steller sea lion was observed with a flasher at the edge of its mouth.	SI	Hooked	Fishery gear	Salmon hook and line	Unknown	Hook and line	P2	1	0
ADFG	7/5/2015	SEAK	Steller Sea Lion	Eastern US	SI	A Steller sea lion was observed with a flasher at the edge of its mouth.	SI	Hooked	Fishery gear	Salmon hook and line	Unknown	Hook and line	P2	1	0
ADFG	7/5/2015	SEAK	Steller Sea Lion	Eastern US	SI	An adult male Steller sea lion was observed with a flasher at the edge of its mouth.	SI	Hooked	Fishery gear	Salmon hook and line	Unknown	Hook and line	P2	1	0

Appendix Table 1.1 -- Human-marine mammal interaction records reviewed for injury and mortality, 2015-2019.

ADFG	7/5/2015	SEAK	Steller Sea Lion	Eastern US	SI	A subadult male Steller sea lion was observed with a constricting neck entanglement caused by unknown material / marine debris.	SI	Constricting entanglement	Marine debris (unidentified)	N/A	N/A	N/A	P8a	1	0
AKRO	7/6/2015	SEAK	Steller Sea Lion	Eastern US	SI	A Steller sea lion was reported to have ingested salmon hook and line gear; a silver flasher was hanging from its mouth.	SI	Hooked	Fishery gear	Salmon hook and line	Unknown	Hook and line	P2	1	0
ADFG	7/6/2015	SEAK	Steller Sea Lion	Eastern US	SI	A subadult male Steller sea lion that had ingested salmon hook and line gear was captured, the flasher was removed, and the animal was released. An ingested hook was still presumed to be present.	SI	Hooked	Fishery gear	Salmon hook and line	Unknown	Hook and line	P2	1	0
ADFG	7/6/2015	SEAK	Steller Sea Lion	Eastern US	SI	An adult male Steller sea lion was observed with a flasher at the edge of its mouth.	SI	Hooked	Fishery gear	Salmon hook and line	Unknown	Hook and line	P2	1	0
ADFG	7/7/2015	SEAK	Steller Sea Lion	Eastern US	SI	A subadult male Steller sea lion with a constricting entanglement caused by a packing band was captured, disentangled, and released.	NSI	Constricting entanglement	Marine debris (packing band)	N/A	N/A	N/A	P7b	0	0
WCGOP	7/8/2015	WC	Steller Sea Lion	Eastern US	DEAD	A Steller sea lion was caught and killed in catch shares bottom trawl gear.	DEAD	Entangled / entrapped	Fishery gear	Catch shares bottom trawl	Commercial	Trawl	N/A	1	1
ADFG	7/9/2015	SEAK	Steller Sea Lion	Eastern US	SI	An adult male Steller sea lion was observed with a flasher at the edge of its mouth.	SI	Hooked	Fishery gear	Salmon hook and line	Unknown	Hook and line	P2	1	0
ADFG	7/10/2015	SEAK	Steller Sea Lion	Eastern US	NSI	A Steller sea lion was observed with a circle hook in its lip.	NSI	Hooked	Fishery gear	Unknown hook and line	Unknown	Hook and line	P5b	0	0
AKRO	7/10/2015	SEAK	Steller Sea Lion	Eastern US	SI	A Steller sea lion that had ingested salmon hook and line gear was observed near Juneau. An orange and silver flasher was observed hanging from its mouth.	SI	Hooked	Fishery gear	Salmon hook and line	Unknown	Hook and line	P2	1	0
ADFG	7/10/2015	SEAK	Steller Sea Lion	Eastern US	SI	A subadult male Steller sea lion that had ingested salmon hook and line gear was captured, the flasher was removed, and the animal was released. An ingested hook was still presumed to be present.	SI	Hooked	Fishery gear	Salmon hook and line	Unknown	Hook and line	P2	1	0
ADFG	7/10/2015	SEAK	Steller Sea Lion	Eastern US	SI	An adult male Steller sea lion was observed with a flasher at the edge of its mouth.	SI	Hooked	Fishery gear	Salmon hook and line	Unknown	Hook and line	P2	1	0
ADFG	7/10/2015	SEAK	Steller Sea Lion	Eastern US	SI	A subadult male Steller sea lion was observed with a flasher at the edge of its mouth.	SI	Hooked	Fishery gear	Salmon hook and line	Unknown	Hook and line	P2	1	0
ADFG	7/10/2015	SEAK	Steller Sea Lion	Eastern US	SI	An adult male Steller sea lion was observed with a flasher at the edge of its mouth.	SI	Hooked	Fishery gear	Salmon hook and line	Unknown	Hook and line	P2	1	0
WCGOP	7/10/2015	WC	Steller Sea Lion	Eastern US	DEAD	A Steller sea lion was caught and killed in catch shares bottom trawl gear.	DEAD	Entangled / entrapped	Fishery gear	Catch shares bottom trawl	Commercial	Trawl	N/A	1	1
ADFG	7/11/2015	SEAK	Steller Sea Lion	Eastern US	SI	A subadult male Steller sea lion was observed with a circumferential neck entanglement caused by unknown material / marine debris	SI	Constricting entanglement	Marine debris (unidentified)	N/A	N/A	N/A	P8a	1	0
NPGOP	7/16/2015	GOA	Steller Sea Lion	Eastern US	DEAD	A Steller sea lion was caught and killed in AK GOA halibut longline gear.	DEAD	Hooked	Fishery gear	AK GOA halibut longline	Commercial	Longline	N/A	1	1
AKRO	7/22/2015	SEAK	Steller Sea Lion	Eastern US	SI	A large male Steller sea lion that had ingested salmon hook and line gear was observed hauled out with a large flasher hanging from its mouth. The sea lion was observed and reported by a tour boat naturalist.	SI	Hooked	Fishery gear	Salmon hook and line	Unknown	Hook and line	P2	1	0

Appendix Table 1.1 -- Human-marine mammal interaction records reviewed for injury and mortality, 2015-2019.

AKRO	7/22/2015	SEAK	Steller Sea Lion	Eastern US	SI	A subadult male Steller sea lion that had ingested salmon hook and line gear was observed hauled out with a large flasher hanging from its mouth. Dried blood was observed on the flasher and the sea lion was reported to look "sickly." The sea lion was observed and reported by a tour boat naturalist.	SI	Hooked	Fishery gear	Salmon hook and line	Unknown	Hook and line	P2	1	0
AKRO	7/26/2015	SEAK	Steller Sea Lion	Eastern US	SI	A Steller sea lion was observed with a circumferential neck entanglement caused by what appeared to be monofilament.	SI	Constricting entanglement	Marine debris (unidentified)	N/A	N/A	N/A	P8a	1	0
AKRO	7/27/2015	SEAK	Steller Sea Lion	Eastern US	SI	A Steller sea lion was observed at the surface of the water with a silver flasher tight to its mouth. The animal was alive, but was reported to barely move for the ~30 minutes that it was observed.	SI	Hooked	Fishery gear	Salmon hook and line	Unknown	Hook and line	P2	1	0
WCGOP	8/3/2015	WC	Steller Sea Lion	Eastern US	DEAD	A Steller sea lion was caught and killed in catch shares bottom trawl gear.	DEAD	Entangled / entrapped	Fishery gear	Catch shares bottom trawl	Commercial	Trawl	N/A	1	1
WCGOP	8/6/2015	WC	Steller Sea Lion	Eastern US	DEAD	A Steller sea lion was caught and killed in catch shares bottom trawl gear.	DEAD	Entangled / entrapped	Fishery gear	Catch shares bottom trawl	Commercial	Trawl	N/A	1	1
WCGOP	8/10/2015	WC	Steller Sea Lion	Eastern US	SI	A Steller sea lion was caught in trawl gear and brought aboard the fishing vessel. The observer stated the animal may have suffered injury from gear around its head and neck, and that the animal had difficulty exiting the vessel.	SI	Entangled / entrapped	Fishery gear	Catch shares bottom trawl	Commercial	Trawl	P4	1	1
WCGOP	8/20/2015	WC	Steller Sea Lion	Eastern US	DEAD	A Steller sea lion was caught and killed in catch shares bottom trawl gear.	DEAD	Entangled / entrapped	Fishery gear	Catch shares bottom trawl	Commercial	Trawl	N/A	1	1
SWFSC	8/26/2015	WC	Steller Sea Lion	Eastern US	DEAD	A Steller sea lion was found dead with multiple gunshot wounds.	DEAD	Shot	Projectile weapon	N/A	N/A	N/A	N/A	1	0
SWFSC	8/30/2015	WC	Steller Sea Lion	Eastern US	DEAD	A Steller sea lion that had ingested hook and line fishery gear was found dead. The animal also had a shark bite on its right flank.	DEAD	Hooked	Fishery gear	Unknown hook and line	Unknown	Hook and line	N/A	1	0
AKRO	9/3/2015	SEAK	Steller Sea Lion	Eastern US	SI	A Steller sea lion was observed that had ingested salmon hook and line fishery gear; a pink flasher was visible hanging from the animal's mouth. The sea lion was reported to be thin and lethargic.	SI	Hooked	Fishery gear	Salmon hook and line	Unknown	Hook and line	P2	1	0
NPGOP	9/23/2015	GOA	Steller Sea Lion	Eastern US	DEAD	A Steller sea lion was caught and killed in AK GOA longline gear.	DEAD	Hooked	Fishery gear	AK GOA sablefish longline	Commercial	Longline	N/A	1	1
SWFSC	9/27/2015	WC	Steller Sea Lion	Eastern US	DEAD	A Steller sea lion was found dead with a circumferential neck entanglement caused by monofilament.	DEAD	Constricting entanglement	Fishery gear	Unknown hook and line	Unknown	Hook and line	N/A	1	0
WCRO	10/4/2015	WC	Steller Sea Lion	Eastern US	DEAD	A Steller sea lion was found dead and was suspected of being shot. A portion of the animal's skull was reported to be "blown away," and there was a hole in the animal's abdomen associated with hemorrhage. The animal was in excellent body condition.	DEAD	Shot	Projectile weapon	N/A	N/A	N/A	N/A	1	0
WCGOP	10/4/2015	WC	Steller Sea Lion	Eastern US	DEAD	A Steller sea lion was caught and killed in catch shares bottom trawl gear.	DEAD	Entangled / entrapped	Fishery gear	Catch shares bottom trawl	Commercial	Trawl	N/A	1	1
WCRO	10/17/2015	WC	Steller Sea Lion	Eastern US	SI	A subadult male Steller sea lion was observed with a circumferential neck entanglement that appeared to be caused by a packing band. The animal was thin, but appeared to be exhibiting normal behavior.	SI	Constricting entanglement	Marine debris (packing band)	N/A	N/A	N/A	P8a	1	0
WCRO	11/2/2015	WC	Steller Sea Lion	Eastern US	DEAD	A Steller sea lion was found dead. Multiple perforations and 4 shotgun pellet projectiles were found inside the animal.	DEAD	Shot	Projectile weapon	N/A	N/A	N/A	N/A	1	0

Appendix Table 1.1 -- Human-marine mammal interaction records reviewed for injury and mortality, 2015-2019.

WCRO	11/15/2015	WC	Steller Sea Lion	Eastern US	DEAD	A Steller sea lion was found with a bullet wound in the abdomen and through the stomach. Stomach contents filled the abdominal cavity, and there was hemorrhage throughout the body.	DEAD	Shot	Projectile weapon	N/A	N/A	N/A	N/A	1	0
WCRO	12/29/2015	WC	Steller Sea Lion	Eastern US	DEAD	An adult male Steller sea lion was found dead and a necropsy was conducted. A bullet was found in its skull.	DEAD	Shot	Projectile weapon	N/A	N/A	N/A	N/A	1	0
WCGOP	2/7/2016	WC	Steller Sea Lion	Eastern US	NSI	A Steller sea lion was caught in trawl gear, brought on deck, and then released alive.	NSI	Entangled / entrapped	Fishery gear	Catch shares bottom trawl	Commercial	Trawl	P4	0	0
WCGOP	2/12/2016	WC	Steller Sea Lion	Eastern US	NSI	A Steller sea lion was caught in trawl gear and then released alive.	NSI	Entangled / entrapped	Fishery gear	Catch shares bottom trawl	Commercial	Trawl	P7b	0	0
WCGOP	2/13/2016	WC	Steller Sea Lion	Eastern US	NSI	A Steller sea lion was caught in trawl gear and then released alive.	NSI	Entangled / entrapped	Fishery gear	Catch shares bottom trawl	Commercial	Trawl	P7b	0	0
WCGOP	2/16/2016	WC	Steller Sea Lion	Eastern US	DEAD	Two Steller sea lions were caught and killed in trawl gear. This record represents sea lion 1 of 2.	DEAD	Entangled / entrapped	Fishery gear	OA CA halibut bottom trawl	Commercial	Trawl	N/A	1	1
WCGOP	2/16/2016	WC	Steller Sea Lion	Eastern US	DEAD	Two Steller sea lions were caught and killed in trawl gear. This record represents sea lion 2 of 2.	DEAD	Entangled / entrapped	Fishery gear	OA CA halibut bottom trawl	Commercial	Trawl	N/A	1	1
WCRO	2/21/2016	WC	Steller Sea Lion	Eastern US	SI	A Steller sea lion was originally observed in a lethargic state on shore on 2/21/2016 and was found dead on 2/28/2016. A necropsy was conducted and a projectile was recovered from the carcass.	DEAD	Shot	Projectile weapon	N/A	N/A	N/A	N/A	1	0
WCGOP	2/26/2016	WC	Steller Sea Lion	Eastern US	DEAD	A Steller sea lion was caught and killed in trawl gear.	DEAD	Entangled / entrapped	Fishery gear	OA CA halibut bottom trawl	Commercial	Trawl	N/A	1	1
WCRO	3/7/2016	WC	Steller Sea Lion	Eastern US	DEAD	A Steller sea lion was found in a state of moderate decomposition and a necropsy was conducted. Suspicious holes and associated hemorrhage, twisted intestines, and hemorrhage in the organs indicated the animal had been shot.	DEAD	Shot	Projectile weapon	N/A	N/A	N/A	N/A	1	0
WCRO	3/12/2016	WC	Steller Sea Lion	Eastern US	DEAD	A Steller sea lion was found in a state of advanced decomposition and a necropsy was conducted. Suspicious holes, associated hemorrhage, organ damage, and twisted intestines indicated that the animal had been shot.	DEAD	Shot	Projectile weapon	N/A	N/A	N/A	N/A	1	0
WCRO	3/16/2016	WC	Steller Sea Lion	Eastern US	DEAD	A Steller sea lion was found in a state of advanced decomposition and a necropsy was conducted. Penetrating wounds with associated hemorrhage, and recovery of projectiles from the carcass indicated that the animal had been shot.	DEAD	Shot	Projectile weapon	N/A	N/A	N/A	N/A	1	0
WCGOP	4/5/2016	WC	Steller Sea Lion	Eastern US	DEAD	A Steller sea lion was caught and killed in longline gear.	DEAD	Entangled / entrapped	Fishery gear	Limited entry sablefish longline	Commercial	Longline	N/A	1	1
WCRO	4/8/2016	WC	Steller Sea Lion	Eastern US	DEAD	A Steller sea lion was discovered in an advanced state of decomposition and a necropsy was conducted. Tracking wounds with associated hemorrhaging and recovery of projectiles indicate the animal had been shot.	DEAD	Shot	Projectile weapon	N/A	N/A	N/A	N/A	1	0
WCRO	4/12/2016	WC	Steller Sea Lion	Eastern US	DEAD	A Steller sea lion was found in a state of moderate decomposition and a necropsy was conducted. There was substantial hemorrhage in the head, body, and organs as well as bloody fluid and sand in the thoracic cavity, indicating the animal had been shot.	DEAD	Shot	Projectile weapon	N/A	N/A	N/A	N/A	1	0

Appendix Table 1.1 -- Human-marine mammal interaction records reviewed for injury and mortality, 2015-2019.

WCRO	4/18/2016	WC	Steller Sea Lion	Eastern US	DEAD	A Steller sea lion was found in a state of moderate decomposition and a necropsy was conducted. Suspicious holes, marks that looked like bullet-grazes, and hemorrhage throughout the body indicated the animal had been shot.	DEAD	Shot	Projectile weapon	N/A	N/A	N/A	N/A	1	0
WCRO	4/19/2016	WC	Steller Sea Lion	Eastern US	DEAD	A Steller sea lion was found in a state of moderate decomposition and a necropsy was conducted. The animal had bullet holes in its body with associated hemorrhage, organ damage, and twisted intestines. Projectiles were recovered from the carcass.	DEAD	Shot	Projectile weapon	N/A	N/A	N/A	N/A	1	0
WCGOP	4/19/2016	WC	Steller Sea Lion	Eastern US	DEAD	A Steller sea lion was caught and killed in longline gear.	DEAD	Entangled / entrapped	Fishery gear	Limited entry sablefish longline	Commercial	Longline	N/A	1	1
ADFG	4/22/2016	SEAK	Steller Sea Lion	Eastern US	SI	A Steller sea lion was observed with a circumferential neck entanglement caused by unknown material.	SI	Constricting entanglement	Marine debris (unidentified)	N/A	N/A	N/A	P8a	1	0
WCRO	4/26/2016	WC	Steller Sea Lion	Eastern US	SI	A Steller sea lion was observed with multiple straight, parallel incisions seen on its posterior. The deepest wound was approximately 30-40 cm long. The animal appeared to have a healthy bed of granulation tissue at the site of injury.	SI	Ship strike	Vessel (unknown)	N/A	N/A	N/A	P15	1	0
ADFG	4/26/2016	SEAK	Steller Sea Lion	Eastern US	SI	A Steller sea lion was observed with a circumferential neck entanglement caused by unknown material.	SI	Constricting entanglement	Marine debris (unidentified)	N/A	N/A	N/A	P8a	1	0
NPGOP	4/28/2016	SEAK	Steller Sea Lion	Eastern US	NSI	An observer reported that a live Steller sea lion was briefly entangled in longline gear during an unsampled haul.	NSI	Entangled / entrapped	Fishery gear	AK GOA halibut longline	Commercial	Longline	P7b	0	0
WCRO	5/5/2016	WC	Steller Sea Lion	Eastern US	DEAD	A Steller sea lion was found in a state of moderate decomposition and a necropsy was conducted. The animal had been shot, indicated by penetrating wounds with associated hemorrhage, twisted intestines, and an abdominal cavity filled with bloody fluid. Projectile(s) were recovered from the carcass.	DEAD	Shot	Projectile weapon	N/A	N/A	N/A	N/A	1	0
AKRO	5/15/2016	SEAK	Steller Sea Lion	Eastern US	SI	A Steller sea lion was observed entangled in salmon hook and line gear that consisted of a white hoochie and green flasher.	SI	Entangled / entrapped	Fishery gear	Salmon hook and line	Unknown	Hook and line	P8a	1	0
ADFG	5/28/2016	SEAK	Steller Sea Lion	Eastern US	SI	A subadult male Steller sea lion was observed with a flasher at the edge of its mouth.	SI	Hooked	Fishery gear	Salmon hook and line	Unknown	Hook and line	P2	1	0
ADFG	6/4/2016	SEAK	Steller Sea Lion	Eastern US	SI	An adult female Steller sea lion was observed with a circumferential neck entanglement caused by unknown material.	SI	Constricting entanglement	Marine debris (unidentified)	N/A	N/A	N/A	P8a	1	0
ADFG	6/9/2016	SEAK	Steller Sea Lion	Eastern US	NSI	A subadult male Steller sea lion was observed with a treble hook in its lip	NSI	Hooked	Fishery gear	Unknown hook and line	Unknown	Hook and line	P5b	0	0
ADFG	6/12/2016	SEAK	Steller Sea Lion	Eastern US	SI	An adult female Steller sea lion was observed with a circumferential neck entanglement caused by unidentified material.	SI	Constricting entanglement	Marine debris (unidentified)	N/A	N/A	N/A	P8a	1	0
WCRO	6/12/2016	WC	Steller Sea Lion	Eastern US	DEAD	A Steller sea lion was discovered in a state of moderate decomposition. The animal had a flasher in its mouth, and a hook was found perforating the animal's esophagus.	DEAD	Hooked	Fishery gear	Unknown hook and line	Unknown	Hook and line	N/A	1	0
ADFG	6/19/2016	SEAK	Steller Sea Lion	Eastern US	SI	An adult female Steller sea lion was observed with a circumferential neck entanglement caused by unidentified material.	SI	Constricting entanglement	Marine debris (unidentified)	N/A	N/A	N/A	P8a	1	0

Appendix Table 1.1 -- Human-marine mammal interaction records reviewed for injury and mortality, 2015-2019.

AKRO	6/21/2016	SEAK	Steller Sea Lion	Eastern US	SI	A Steller sea lion was observed to be trailing an orange buoy through the water.	SI	Entangled / entrapped	Marine debris (unidentified)	N/A	N/A	N/A	P6	1	0
ADFG	6/22/2016	SEAK	Steller Sea Lion	Eastern US	SI	An adult male Steller sea lion was observed with a circumferential neck entanglement caused by unidentified material.	SI	Constricting entanglement	Marine debris (unidentified)	N/A	N/A	N/A	P8a	1	0
ADFG	6/24/2016	SEAK	Steller Sea Lion	Eastern US	SI	An adult female Steller sea lion was observed with a line and orange weight hanging from its mouth. The report states that it's presumed that the animal ingested the hook, or the hook is in the animal's mouth.	SI	Hooked	Fishery gear	Unknown hook and line	Unknown	Hook and line	P5a	1	0
ADFG	6/25/2016	SEAK	Steller Sea Lion	Eastern US	SI	A subadult male Steller sea lion was observed with a circumferential neck entanglement caused by unidentified material.	SI	Constricting entanglement	Marine debris (unidentified)	N/A	N/A	N/A	P8a	1	0
ADFG	6/28/2016	SEAK	Steller Sea Lion	Eastern US	SI	A Steller sea lion was observed with a circumferential neck entanglement caused by unidentified material.	SI	Constricting entanglement	Marine debris (unidentified)	N/A	N/A	N/A	P8a	1	0
ADFG	6/29/2016	SEAK	Steller Sea Lion	Eastern US	SI	An adult male Steller sea lion was observed with a neck entanglement caused by unknown material.	SI	Constricting entanglement	Marine debris (unidentified)	N/A	N/A	N/A	P8a	1	0
ADFG	6/29/2016	SEAK	Steller Sea Lion	Eastern US	SI	An adult female Steller sea lion was observed with a flasher at the edge of its mouth.	SI	Hooked	Fishery gear	Salmon hook and line	Unknown	Hook and line	P2	1	0
ADFG	6/29/2016	SEAK	Steller Sea Lion	Eastern US	SI	An adult female Steller sea lion was observed with a circumferential neck entanglement caused by unidentified material.	SI	Constricting entanglement	Marine debris (unidentified)	N/A	N/A	N/A	P8a	1	0
ADFG	6/29/2016	SEAK	Steller Sea Lion	Eastern US	SI	A subadult male Steller sea lion was observed with a circumferential neck entanglement caused by a packing band.	SI	Constricting entanglement	Marine debris (packing band)	N/A	N/A	N/A	P8a	1	0
ADFG	6/30/2016	SEAK	Steller Sea Lion	Eastern US	SI	A subadult male Steller sea lion was observed with a flasher at the edge of its mouth.	SI	Hooked	Fishery gear	Salmon hook and line	Unknown	Hook and line	P2	1	0
ADFG	6/30/2016	SEAK	Steller Sea Lion	Eastern US	SI	A subadult male Steller sea lion was observed with a flasher at the edge of its mouth.	SI	Hooked	Fishery gear	Salmon hook and line	Unknown	Hook and line	P2	1	0
ADFG	6/30/2016	SEAK	Steller Sea Lion	Eastern US	SI	An adult female Steller sea lion was observed with a circumferential neck entanglement caused by a packing band.	SI	Constricting entanglement	Marine debris (packing band)	N/A	N/A	N/A	P8a	1	0
ADFG	7/2/2016	SEAK	Steller Sea Lion	Eastern US	SI	A subadult male Steller sea lion that had ingested salmon hook and line gear was captured, the flasher was removed, and the animal was released. An ingested hook was still presumed to be present.	SI	Hooked	Fishery gear	Salmon hook and line	Unknown	Hook and line	P2	1	0
ADFG	7/2/2016	SEAK	Steller Sea Lion	Eastern US	SI	A Steller sea lion was observed with a circumferential neck entanglement caused by unidentified material.	SI	Constricting entanglement	Marine debris (packing band)	N/A	N/A	N/A	P8a	1	0
AKRO	7/3/2016	GOA	Steller Sea Lion	Eastern US	DEAD	A Steller sea lion was found dead and necropsied. The animal had a 3 cm round wound on its torso and a wound that matched in size and location on its right flipper where the flipper overlapped the torso. There was significant hemorrhage in the abdominal cavity associated with the wound.	DEAD	Shot	Projectile weapon	N/A	N/A	N/A	N/A	1	0
ADFG	7/3/2016	SEAK	Steller Sea Lion	Eastern US	SI	An adult female Steller sea lion was observed with a flasher at the edge of its mouth.	SI	Hooked	Fishery gear	Salmon hook and line	Unknown	Hook and line	P2	1	0

Appendix Table 1.1 -- Human-marine mammal interaction records reviewed for injury and mortality, 2015-2019.

ADFG	7/3/2016	SEAK	Steller Sea Lion	Eastern US	SI	An adult female Steller sea lion was observed with a flasher at the edge of its mouth.	SI	Hooked	Fishery gear	Salmon hook and line	Unknown	Hook and line	P2	1	0
ADFG	7/4/2016	SEAK	Steller Sea Lion	Eastern US	SI	An adult male Steller sea lion was observed with a flasher at the edge of its mouth.	SI	Hooked	Fishery gear	Salmon hook and line	Unknown	Hook and line	P2	1	0
ADFG	7/4/2016	SEAK	Steller Sea Lion	Eastern US	SI	A subadult male Steller sea lion was observed with a circumferential neck entanglement caused by a packing band.	SI	Constricting entanglement	Marine debris (packing band)	N/A	N/A	N/A	P8a	1	0
ADFG	7/5/2016	SEAK	Steller Sea Lion	Eastern US	SI	An adult male Steller sea lion was observed with a flasher at the edge of its mouth.	SI	Hooked	Fishery gear	Salmon hook and line	Unknown	Hook and line	P2	1	0
ADFG	7/5/2016	SEAK	Steller Sea Lion	Eastern US	SI	A subadult male Steller sea lion was observed with a flasher at the edge of its mouth.	SI	Hooked	Fishery gear	Salmon hook and line	Unknown	Hook and line	P2	1	0
ADFG	7/5/2016	SEAK	Steller Sea Lion	Eastern US	SI	A Steller sea lion was observed with a flasher tight to the edge of its mouth.	SI	Hooked	Fishery gear	Salmon hook and line	Unknown	Hook and line	P2	1	0
ADFG	7/6/2016	SEAK	Steller Sea Lion	Eastern US	SI	An adult male Steller sea lion was observed with a flasher at the edge of its mouth.	SI	Hooked	Fishery gear	Salmon hook and line	Unknown	Hook and line	P2	1	0
ADFG	7/6/2016	SEAK	Steller Sea Lion	Eastern US	SI	A subadult male Steller sea lion was observed with a flasher at the edge of its mouth.	SI	Hooked	Fishery gear	Salmon hook and line	Unknown	Hook and line	P2	1	0
ADFG	7/6/2016	SEAK	Steller Sea Lion	Eastern US	SI	An adult male Steller sea lion was observed with a flasher in its mouth.	SI	Hooked	Fishery gear	Salmon hook and line	Unknown	Hook and line	P2	1	0
ADFG	7/6/2016	SEAK	Steller Sea Lion	Eastern US	SI	A Steller sea lion was observed with a circumferential neck entanglement caused by unidentified material.	SI	Constricting entanglement	Marine debris (unidentified)	N/A	N/A	N/A	P8a	1	0
ADFG	7/7/2016	SEAK	Steller Sea Lion	Eastern US	SI	A subadult male Steller sea lion was observed with a flasher at the edge of its mouth.	SI	Hooked	Fishery gear	Salmon hook and line	Unknown	Hook and line	P2	1	0
WCRO	7/7/2016	WC	Steller Sea Lion	Eastern US	SI	A Steller sea lion was observed alive with an apparent gunshot wound. Two days later, the animal was found dead. A .22 caliber bullet was recovered from the animal's head by NOAA Law Enforcement.	DEAD	Shot	Projectile weapon	N/A	N/A	N/A	N/A	1	0
ADFG	7/8/2016	SEAK	Steller Sea Lion	Eastern US	SI	A subadult male Steller sea lion was observed with a flasher at the edge of its mouth.	SI	Hooked	Fishery gear	Salmon hook and line	Unknown	Hook and line	P2	1	0
ADFG	7/8/2016	SEAK	Steller Sea Lion	Eastern US	SI	A subadult male Steller sea lion was observed with a flasher at the edge of its mouth. The sea lion was captured, the flasher was removed, and the animal was released.	SI	Hooked	Fishery gear	Salmon hook and line	Unknown	Hook and line	P2	1	0
ADFG	7/8/2016	SEAK	Steller Sea Lion	Eastern US	SI	A subadult male Steller sea lion was observed with a flasher at the edge of its mouth.	SI	Hooked	Fishery gear	Salmon hook and line	Unknown	Hook and line	P2	1	0
ADFG	7/8/2016	SEAK	Steller Sea Lion	Eastern US	SI	An adult female Steller sea lion was observed with a circumferential neck entanglement caused by unidentified material.	SI	Constricting entanglement	Marine debris (unidentified)	N/A	N/A	N/A	P8a	1	0
ADFG	7/8/2016	SEAK	Steller Sea Lion	Eastern US	SI	An adult female Steller sea lion was observed with a circumferential neck entanglement caused by unidentified material. The animal was reported with a pup. This record represents the mother.	SI	Constricting entanglement	Marine debris (unidentified)	N/A	N/A	N/A	P8a	1	0
ADFG	7/8/2016	SEAK	Steller Sea Lion	Eastern US	SI	An adult female Steller sea lion was observed with a constricting neck entanglement caused by unknown material / marine debris. The animal was reported with a pup. This record represents the pup.	SI	Dependent animal with mother seriously injured	Marine debris (unidentified)	N/A	N/A	N/A	P14	1	0

Appendix Table 1.1 -- Human-marine mammal interaction records reviewed for injury and mortality, 2015-2019.

ADFG	7/8/2016	SEAK	Steller Sea Lion	Eastern US	SI	An adult female Steller sea lion was observed with a circumferential neck entanglement caused by unknown material.	SI	Constricting entanglement	Marine debris (unidentified)	N/A	N/A	N/A	P8a	1	0
ADFG	7/9/2016	SEAK	Steller Sea Lion	Eastern US	SI	A subadult male Steller sea lion was observed with a flasher tight to its mouth. The sea lion was captured, the flasher was removed, and the animal was released.	SI	Hooked	Fishery gear	Salmon hook and line	Unknown	Hook and line	P2	1	0
ADFG	7/9/2016	SEAK	Steller Sea Lion	Eastern US	SI	A subadult male Steller sea lion was observed with a flasher at the edge of its mouth.	SI	Hooked	Fishery gear	Salmon hook and line	Unknown	Hook and line	P2	1	0
ADFG	7/9/2016	SEAK	Steller Sea Lion	Eastern US	SI	An adult male Steller sea lion was observed with a flasher at the edge of its mouth.	SI	Hooked	Fishery gear	Salmon hook and line	Unknown	Hook and line	P2	1	0
ADFG	7/9/2016	SEAK	Steller Sea Lion	Eastern US	SI	An adult male Steller sea lion was observed with a flasher at the edge of its mouth.	SI	Hooked	Fishery gear	Salmon hook and line	Unknown	Hook and line	P2	1	0
ADFG	7/9/2016	SEAK	Steller Sea Lion	Eastern US	SI	A subadult male Steller sea lion was observed with a circumferential neck entanglement caused by a packing band.	SI	Constricting entanglement	Marine debris (packing band)	N/A	N/A	N/A	P8a	1	0
ADFG	7/9/2016	SEAK	Steller Sea Lion	Eastern US	SI	A subadult male Steller sea lion was observed with a circumferential neck entanglement caused by a packing band.	SI	Constricting entanglement	Marine debris (packing band)	N/A	N/A	N/A	P8a	1	0
ADFG	7/10/2016	SEAK	Steller Sea Lion	Eastern US	SI	An adult male Steller sea lion was observed with a flasher at the edge of its mouth.	SI	Hooked	Fishery gear	Salmon hook and line	Unknown	Hook and line	P2	1	0
ADFG	7/10/2016	SEAK	Steller Sea Lion	Eastern US	SI	A subadult Steller sea lion was observed with a flasher at the edge of its mouth.	SI	Hooked	Fishery gear	Salmon hook and line	Unknown	Hook and line	P2	1	0
ADFG	7/10/2016	SEAK	Steller Sea Lion	Eastern US	SI	An adult male Steller sea lion was observed with a flasher at the edge of its mouth.	SI	Hooked	Fishery gear	Salmon hook and line	Unknown	Hook and line	P2	1	0
ADFG	7/10/2016	SEAK	Steller Sea Lion	Eastern US	SI	A Steller sea lion was observed with a flasher at the edge of its mouth.	SI	Hooked	Fishery gear	Salmon hook and line	Unknown	Hook and line	P2	1	0
ADFG	7/10/2016	SEAK	Steller Sea Lion	Eastern US	SI	A Steller sea lion was observed with monofilament line that appeared to be wrapped around its neck and a weight hanging at its chest.	SI	Entangled / entrapped	Fishery gear	Unknown hook and line	Unknown	Hook and line	P6	1	0
ADFG	7/10/2016	SEAK	Steller Sea Lion	Eastern US	SI	A subadult male Steller sea lion was observed with a circumferential neck entanglement caused by unidentified material.	SI	Constricting entanglement	Marine debris (unidentified)	N/A	N/A	N/A	P8a	1	0
ADFG	7/10/2016	SEAK	Steller Sea Lion	Eastern US	SI	A subadult Steller sea lion was observed with a circumferential neck entanglement caused by unidentified material.	SI	Constricting entanglement	Marine debris (unidentified)	N/A	N/A	N/A	P8a	1	0
ADFG	7/12/2016	SEAK	Steller Sea Lion	Eastern US	SI	A subadult male Steller sea lion was observed with a flasher at the edge of its mouth.	SI	Hooked	Fishery gear	Salmon hook and line	Unknown	Hook and line	P2	1	0
ADFG	7/12/2016	SEAK	Steller Sea Lion	Eastern US	SI	A subadult male Steller sea lion was observed with a flasher at the edge of its mouth.	SI	Hooked	Fishery gear	Salmon hook and line	Unknown	Hook and line	P2	1	0
ADFG	7/12/2016	SEAK	Steller Sea Lion	Eastern US	SI	An adult male Steller sea lion was observed with a circumferential neck entanglement caused by unidentified material.	SI	Constricting entanglement	Marine debris (unidentified)	N/A	N/A	N/A	P8a	1	0
ADFG	7/12/2016	SEAK	Steller Sea Lion	Eastern US	SI	An adult female Steller sea lion was observed with a circumferential neck entanglement caused by unidentified material.	SI	Constricting entanglement	Marine debris (unidentified)	N/A	N/A	N/A	P8a	1	0
ADFG	7/13/2016	SEAK	Steller Sea Lion	Eastern US	SI	A Steller sea lion was observed with a flasher at the edge of its mouth.	SI	Hooked	Fishery gear	Salmon hook and line	Unknown	Hook and line	P2	1	0
ADFG	7/13/2016	SEAK	Steller Sea Lion	Eastern US	SI	A subadult Steller sea lion was observed with a flasher at the edge of its mouth.	SI	Hooked	Fishery gear	Salmon hook and line	Unknown	Hook and line	P2	1	0

Appendix Table 1.1 -- Human-marine mammal interaction records reviewed for injury and mortality, 2015-2019.

ADFG	7/13/2016	SEAK	Steller Sea Lion	Eastern US	SI	A subadult Steller sea lion was observed with a flasher at the edge of its mouth.	SI	Hooked	Fishery gear	Salmon hook and line	Unknown	Hook and line	P2	1	0
ADFG	7/13/2016	SEAK	Steller Sea Lion	Eastern US	SI	A subadult male Steller sea lion was observed with a circumferential neck entanglement caused by rope.	SI	Constricting entanglement	Marine debris (rope)	N/A	N/A	N/A	P8a	1	0
ADFG	7/13/2016	SEAK	Steller Sea Lion	Eastern US	SI	A subadult male Steller sea lion was observed with a circumferential neck entanglement caused by unidentified material.	SI	Constricting entanglement	Marine debris (unidentified)	N/A	N/A	N/A	P8a	1	0
ADFG	7/13/2016	SEAK	Steller Sea Lion	Eastern US	SI	A subadult male Steller sea lion was observed with a circumferential neck entanglement caused by unidentified material.	SI	Constricting entanglement	Marine debris (unidentified)	N/A	N/A	N/A	P8a	1	0
ADFG	7/14/2016	SEAK	Steller Sea Lion	Eastern US	SI	An adult female Steller sea lion was observed with a flasher at the edge of its mouth.	SI	Hooked	Fishery gear	Salmon hook and line	Unknown	Hook and line	P2	1	0
ADFG	7/14/2016	SEAK	Steller Sea Lion	Eastern US	SI	A Steller sea lion was observed with a circumferential neck entanglement caused by unknown material.	SI	Constricting entanglement	Marine debris (unidentified)	N/A	N/A	N/A	P8a	1	0
ADFG	7/14/2016	SEAK	Steller Sea Lion	Eastern US	SI	An adult female Steller sea lion was observed with a circumferential neck entanglement caused by rope.	SI	Constricting entanglement	Marine debris (rope)	N/A	N/A	N/A	P8a	1	0
ADFG	7/14/2016	SEAK	Steller Sea Lion	Eastern US	SI	A subadult male Steller sea lion was observed with a circumferential neck entanglement caused by unidentified material.	SI	Constricting entanglement	Marine debris (unidentified)	N/A	N/A	N/A	P8a	1	0
AKRO	7/14/2016	SEAK	Steller Sea Lion	Eastern US	SI	A Steller sea lion ingested salmon hook and line fishery gear and a flasher was observed tight to its right lip.	SI	Hooked	Fishery gear	Salmon hook and line	Unknown	Hook and line	P2	1	0
WCRO	7/18/2016	WC	Steller Sea Lion	Eastern US	DEAD	A Steller sea lion was found in a state of moderate decomposition and a necropsy was conducted. What appeared to be bullet holes, associated hemorrhage, clotting, and organ damage indicated the animal had been shot.	DEAD	Shot	Projectile weapon	N/A	N/A	N/A	N/A	1	0
AKRO	7/19/2016	SEAK	Steller Sea Lion	Eastern US	SI	A Steller sea lion ingested salmon hook and line fishery gear and a flasher was observed hanging from its mouth.	SI	Hooked	Fishery gear	Salmon hook and line	Unknown	Hook and line	P2	1	0
WCRO	7/22/2016	WC	Steller Sea Lion	Eastern US	DEAD	A Steller sea lion was found in a state of advanced decomposition and a necropsy was conducted. Puncture marks of various sizes and depths on the ventral neck, tremendous hemorrhage in the ventral body, track-like wounds with entrance holes, and recovery of projectiles indicated the animal had been shot.	DEAD	Shot	Projectile weapon	N/A	N/A	N/A	N/A	1	0
WCRO	7/24/2016	WC	Steller Sea Lion	Eastern US	SI	An adult female Steller sea lion was observed with a flasher hanging from its mouth. The animal appeared to have a dependent pup. This entry represents the mother.	SI	Hooked	Fishery gear	Unknown hook and line	Unknown	Hook and line	P2	1	0
WCRO	7/24/2016	WC	Steller Sea Lion	Eastern US	SI	An adult female Steller sea lion was observed with a flasher hanging from its mouth. The animal appeared to have a dependent pup. This entry represents the pup.	SI	Dependent animal with mother seriously injured	Fishery gear	Unknown hook and line	Unknown	Hook and line	P14	1	0
WCRO	7/24/2016	WC	Steller Sea Lion	Eastern US	SI	A Steller sea lion was observed with a circumferential neck entanglement caused by what appeared to be a rubber band or packing band. The entanglement deeply cut into the animal.	SI	Constricting entanglement	Marine debris (unidentified)	N/A	N/A	N/A	P8a	1	0

Appendix Table 1.1 -- Human-marine mammal interaction records reviewed for injury and mortality, 2015-2019.

AKRO	7/26/2016	SEAK	Steller Sea Lion	Eastern US	SI	A Steller sea lion ingested salmon hook and line fishery gear, and a flasher and pink hoochie were observed hanging from its mouth.	SI	Hooked	Fishery gear	Salmon hook and line	Unknown	Hook and line	P2	1	0
AKRO	7/29/2016	SEAK	Steller Sea Lion	Eastern US	SI	A Steller sea lion ingested fishery gear and a flasher was observed hanging from the animal's mouth.	SI	Hooked	Fishery gear	Salmon hook and line	Unknown	Hook and line	P2	1	0
AKRO	8/1/2016	SEAK	Steller Sea Lion	Eastern US	SI	A Steller sea lion was observed with a circumferential neck entanglement caused by unknown material.	SI	Constricting entanglement	Marine debris (unidentified)	N/A	N/A	N/A	P8a	1	0
AKRO	8/2/2016	SEAK	Steller Sea Lion	Eastern US	NSI	A Steller sea lion with a circle hook attached to a gangion line in its lip was observed hauled out on a buoy.	NSI	Hooked	Fishery gear	Unknown longline	Unknown	Longline	P5b	0	0
SWFSC	8/7/2016	WC	Steller Sea Lion	Eastern US	SI	A Steller sea lion with monofilament line wrapped around its head and neck was captured, disentangled, and released.	NSI	Constricting entanglement	Fishery gear	Unknown hook and line	Unknown	Hook and line	P7b	0	0
AKRO	8/9/2016	SEAK	Steller Sea Lion	Eastern US	SI	A Steller sea lion ingested salmon hook and line fishery gear and was observed with a flasher with a white/silver body and red/orange rim hanging from its mouth.	SI	Hooked	Fishery gear	Salmon hook and line	Unknown	Hook and line	P2	1	0
AKRO	8/15/2016	SEAK	Steller Sea Lion	Eastern US	SI	A Steller sea lion ingested salmon hook and line fishery gear and a flasher was observed hanging from its mouth.	SI	Hooked	Fishery gear	Salmon hook and line	Unknown	Hook and line	P2	1	0
ADFG	8/16/2016	SEAK	Steller Sea Lion	Eastern US	SI	An adult male Steller sea lion was observed with a circumferential neck entanglement caused by unknown material.	SI	Constricting entanglement	Marine debris (unidentified)	N/A	N/A	N/A	P8a	1	0
ADFG	8/16/2016	SEAK	Steller Sea Lion	Eastern US	SI	A male Steller sea lion was observed with a flasher at the edge of its mouth.	SI	Hooked	Fishery gear	Salmon hook and line	Unknown	Hook and line	P2	1	0
ADFG	8/16/2016	SEAK	Steller Sea Lion	Eastern US	SI	An adult male Steller sea lion was observed with a flasher at the edge of its mouth.	SI	Hooked	Fishery gear	Salmon hook and line	Unknown	Hook and line	P2	1	0
AKRO	8/30/2016	SEAK	Steller Sea Lion	Eastern US	SI	A Steller sea lion with a plastic packing band around its neck was observed hauled out on a buoy. It had also ingested salmon hook and line fishing gear, and a black and white flasher was observed hanging from its mouth.	SI	Hooked	Fishery gear	Salmon hook and line	Unknown	Hook and line	P2	1	0
AKRO	9/8/2016	SEAK	Steller Sea Lion	Eastern US	SI	A Steller sea lion was observed hauled out on a buoy. The sea lion had a hook in its mouth and heavy duty monofilament was reported to be around the animal's neck.	SI	Hooked	Fishery gear	Unknown hook and line	Unknown	Hook and line	P5a	1	0
A-SHOP	10/4/2016	WC	Steller Sea Lion	Eastern US	DEAD	A Steller sea lion was caught and killed in trawl gear.	DEAD	Entangled / entrapped	Fishery gear	At-sea hake mothership catcher vessel midwater trawl	Commercial	Trawl	N/A	1	1
A-SHOP	10/5/2016	WC	Steller Sea Lion	Eastern US	DEAD	A Steller sea lion was caught and killed in trawl gear.	DEAD	Entangled / entrapped	Fishery gear	At-sea hake catcher-processor midwater trawl	Commercial	Trawl	N/A	1	1
A-SHOP	10/14/2016	WC	Steller Sea Lion	Eastern US	NSI	A Steller sea lion was caught in trawl gear. According to the observer the animal was disentangled and released by crew without injuries.	NSI	Entangled / entrapped	Fishery gear	At-sea hake catcher-processor midwater trawl	Commercial	Trawl	P7b	0	0
A-SHOP	10/14/2016	WC	Steller Sea Lion	Eastern US	DEAD	Two Steller sea lions were caught and killed by trawl gear. This record represents animal 1 of 2.	DEAD	Entangled / entrapped	Fishery gear	At-sea hake catcher-processor midwater trawl	Commercial	Trawl	N/A	1	1

Appendix Table 1.1 -- Human-marine mammal interaction records reviewed for injury and mortality, 2015-2019.

A-SHOP	10/14/2016	WC	Steller Sea Lion	Eastern US	DEAD	Two Steller sea lions were caught and killed by trawl gear. This record represents animal 2 of 2.	DEAD	Entangled / entrapped	Fishery gear	At-sea hake catcher-processor midwater trawl	Commercial	Trawl	N/A	1	1
A-SHOP	10/19/2016	WC	Steller Sea Lion	Eastern US	DEAD	A Steller sea lion was caught and killed by trawl gear.	DEAD	Entangled / entrapped	Fishery gear	At-sea hake catcher-processor midwater trawl	Commercial	Trawl	N/A	1	1
A-SHOP	10/27/2016	WC	Steller Sea Lion	Eastern US	DEAD	A Steller sea lion was caught and killed by trawl gear.	DEAD	Entangled / entrapped	Fishery gear	At-sea hake mothership catcher vessel midwater trawl	Commercial	Trawl	N/A	1	1
A-SHOP	11/2/2016	WC	Steller Sea Lion	Eastern US	DEAD	A Steller sea lion was caught and killed in trawl gear.	DEAD	Entangled / entrapped	Fishery gear	At-sea hake catcher-processor midwater trawl	Commercial	Trawl	N/A	1	1
A-SHOP	11/5/2016	WC	Steller Sea Lion	Eastern US	DEAD	A Steller sea lion was caught and killed in trawl gear.	DEAD	Entangled / entrapped	Fishery gear	At-sea hake catcher-processor midwater trawl	Commercial	Trawl	N/A	1	1
A-SHOP	11/6/2016	WC	Steller Sea Lion	Eastern US	DEAD	A Steller sea lion was caught and killed in trawl gear.	DEAD	Entangled / entrapped	Fishery gear	At-sea hake catcher-processor midwater trawl	Commercial	Trawl	N/A	1	1
A-SHOP	11/6/2016	WC	Steller Sea Lion	Eastern US	DEAD	A Steller sea lion was caught and killed in trawl gear.	DEAD	Entangled / entrapped	Fishery gear	At-sea hake catcher-processor midwater trawl	Commercial	Trawl	N/A	1	1
A-SHOP	11/11/2016	WC	Steller Sea Lion	Eastern US	DEAD	A Steller sea lion was caught and killed in trawl gear.	DEAD	Entangled / entrapped	Fishery gear	At-sea hake catcher-processor midwater trawl	Commercial	Trawl	N/A	1	1
A-SHOP	11/11/2016	WC	Steller Sea Lion	Eastern US	DEAD	A Steller sea lion was caught and killed in trawl gear.	DEAD	Entangled / entrapped	Fishery gear	At-sea hake catcher-processor midwater trawl	Commercial	Trawl	N/A	1	1
A-SHOP	11/12/2016	WC	Steller Sea Lion	Eastern US	NSI	A Steller sea lion was caught in trawl gear, brought aboard, and released from the net. It acted aggressively toward the crew, and was forced back into the water.	NSI	Entangled / entrapped	Fishery gear	At-sea hake catcher-processor midwater trawl	Commercial	Trawl	P4	0	0
A-SHOP	11/12/2016	WC	Steller Sea Lion	Eastern US	NSI	A Steller sea lion was caught in trawl gear, brought aboard, released from the net, and motivated by the crew to return to the water.	NSI	Entangled / entrapped	Fishery gear	At-sea hake catcher-processor midwater trawl	Commercial	Trawl	P4	0	0
A-SHOP	11/12/2016	WC	Steller Sea Lion	Eastern US	DEAD	A Steller sea lion was caught and killed in trawl gear.	DEAD	Entangled / entrapped	Fishery gear	At-sea hake catcher-processor midwater trawl	Commercial	Trawl	N/A	1	1
A-SHOP	11/13/2016	WC	Steller Sea Lion	Eastern US	DEAD	Three Steller sea lions were caught and killed in trawl gear. This record represents animal 1 of 3.	DEAD	Entangled / entrapped	Fishery gear	At-sea hake catcher-processor midwater trawl	Commercial	Trawl	N/A	1	1
A-SHOP	11/13/2016	WC	Steller Sea Lion	Eastern US	DEAD	Three Steller sea lions were caught and killed in trawl gear. This record represents animal 2 of 3	DEAD	Entangled / entrapped	Fishery gear	At-sea hake catcher-processor midwater trawl	Commercial	Trawl	N/A	1	1
A-SHOP	11/13/2016	WC	Steller Sea Lion	Eastern US	DEAD	Three Steller sea lions were caught and killed in trawl gear. This record represents animal 3 of 3.	DEAD	Entangled / entrapped	Fishery gear	At-sea hake catcher-processor midwater trawl	Commercial	Trawl	N/A	1	1

Appendix Table 1.1 -- Human-marine mammal interaction records reviewed for injury and mortality, 2015-2019.

A-SHOP	11/14/2016	WC	Steller Sea Lion	Eastern US	NSI	A Steller sea lion was caught in trawl gear, brought aboard, released from the net, and was motivated by the crew to return to the water.	NSI	Entangled / entrapped	Fishery gear	At-sea hake catcher-processor midwater trawl	Commercial	Trawl	P4	0	0
A-SHOP	11/15/2016	WC	Steller Sea Lion	Eastern US	DEAD	A Steller sea lion was caught and killed in trawl gear.	DEAD	Entangled / entrapped	Fishery gear	At-sea hake catcher-processor midwater trawl	Commercial	Trawl	N/A	1	1
A-SHOP	11/16/2016	WC	Steller Sea Lion	Eastern US	DEAD	A Steller sea lion was caught and killed in trawl gear.	DEAD	Entangled / entrapped	Fishery gear	At-sea hake catcher-processor midwater trawl	Commercial	Trawl	N/A	1	1
A-SHOP	11/16/2016	WC	Steller Sea Lion	Eastern US	NSI	A Steller sea lion was caught in trawl gear, brought aboard, released from the net, and was motivated by the crew to return to the water.	NSI	Entangled / entrapped	Fishery gear	At-sea hake catcher-processor midwater trawl	Commercial	Trawl	P4	0	0
A-SHOP	11/16/2016	WC	Steller Sea Lion	Eastern US	DEAD	Three Steller sea lions were caught and killed in trawl gear. This record represents animal 1 of 3.	DEAD	Entangled / entrapped	Fishery gear	At-sea hake catcher-processor midwater trawl	Commercial	Trawl	N/A	1	1
A-SHOP	11/16/2016	WC	Steller Sea Lion	Eastern US	DEAD	Three Steller sea lions were caught and killed in trawl gear. This record represents animal 2 of 3.	DEAD	Entangled / entrapped	Fishery gear	At-sea hake catcher-processor midwater trawl	Commercial	Trawl	N/A	1	1
A-SHOP	11/16/2016	WC	Steller Sea Lion	Eastern US	DEAD	Three Steller sea lions were caught and killed in trawl gear. This record represents animal 3 of 3.	DEAD	Entangled / entrapped	Fishery gear	At-sea hake catcher-processor midwater trawl	Commercial	Trawl	N/A	1	1
A-SHOP	11/16/2016	WC	Steller Sea Lion	Eastern US	DEAD	A Steller sea lion was caught and killed in trawl gear.	DEAD	Entangled / entrapped	Fishery gear	At-sea hake catcher-processor midwater trawl	Commercial	Trawl	N/A	1	1
A-SHOP	11/18/2016	WC	Steller Sea Lion	Eastern US	DEAD	A Steller sea lion was caught and killed in trawl gear.	DEAD	Entangled / entrapped	Fishery gear	At-sea hake catcher-processor midwater trawl	Commercial	Trawl	N/A	1	1
WCGOP	2/3/2017	WC	Steller Sea Lion	Eastern US	NSI	A Steller sea lion was caught in trawl gear, brought aboard, and released from the net. Once free from the net the sea lion quickly jumped off the side of the boat and into the water. No visible signs of injury.	NSI	Entangled / entrapped	Fishery gear	Catch shares bottom trawl	Commercial	Trawl	P4	0	0
WCGOP	3/16/2017	WC	Steller Sea Lion	Eastern US	DEAD	A Steller sea lion was caught and killed in Open Access (OA) CA halibut bottom trawl gear.	DEAD	Entangled / entrapped	Fishery gear	OA CA halibut bottom trawl	Commercial	Trawl	N/A	1	1
AKRO	4/11/2017	SEAK	Steller Sea Lion	Eastern US	SI	A Steller sea lion with a circumferential neck entanglement caused by unknown material / marine debris was observed hauled out on a green buoy.	SI	Constricting entanglement	Marine debris (unidentified)	N/A	N/A	N/A	P8a	1	0
WCRO	4/24/2017	WC	Steller Sea Lion	Eastern US	DEAD	An adult male Steller sea lion was found freshly dead of a gunshot wound. A necropsy found a 1 cm diameter buckshot lodged in tissue just above the lower left mandible with fractures of the left lower and upper canines.	DEAD	Shot	Projectile weapon	N/A	N/A	N/A	N/A	1	0
AKRO	4/25/2017	SEAK	Steller Sea Lion	Eastern US	SI	A subadult male Steller sea lion was observed hauled out on the west side of Benjamin Island, AK, with a constricting circumferential neck entanglement caused by unknown material / marine debris.	SI	Constricting entanglement	Marine debris (unidentified)	N/A	N/A	N/A	P8a	1	0

Appendix Table 1.1 -- Human-marine mammal interaction records reviewed for injury and mortality, 2015-2019.

NPGOP	4/25/2017	GOA	Steller Sea Lion	Eastern US	DEAD	A Steller sea lion was caught and killed in AK GOA sablefish longline gear.	DEAD	Hooked	Fishery gear	AK GOA sablefish longline	Commercial	Longline	N/A	1	1
AKRO	5/4/2017	SEAK	Steller Sea Lion	Eastern US	SI	A Steller sea lion was observed hauled out with a circumferential neck entanglement caused by unidentified material.	SI	Constricting entanglement	Marine debris (unidentified)	N/A	N/A	N/A	P8a	1	0
ADFG	5/6/2017	SEAK	Steller Sea Lion	Eastern US	SI	An adult male Steller sea lion was observed with a flasher at the edge of its mouth.	SI	Hooked	Fishery gear	Salmon hook and line	Unknown	Hook and line	P2	1	0
AKRO	5/8/2017	SEAK	Steller Sea Lion	Eastern US	SI	A Steller sea lion was observed hauled out on Benjamin Island, AK, with a circumferential neck entanglement caused by unknown material / marine debris.	SI	Constricting entanglement	Marine debris (unidentified)	N/A	N/A	N/A	P8a	1	0
AKRO	5/13/2017	SEAK	Steller Sea Lion	Eastern US	SI	A Steller sea lion was observed hauled out on South Marble Island with a constricting circumferential neck entanglement caused by unknown material / marine debris.	SI	Constricting entanglement	Marine debris (unidentified)	N/A	N/A	N/A	P8a	1	0
ADFG	5/29/2017	SEAK	Steller Sea Lion	Eastern US	SI	An adult female Steller sea lion was observed with a circumferential neck entanglement caused by an unknown material.	SI	Constricting entanglement	Marine debris (unidentified)	N/A	N/A	N/A	P8a	1	0
ADFG	5/30/2017	SEAK	Steller Sea Lion	Eastern US	SI	A Steller sea lion was observed with a circumferential neck entanglement caused by an unknown material.	SI	Constricting entanglement	Marine debris (unidentified)	N/A	N/A	N/A	P8a	1	0
ADFG	6/3/2017	SEAK	Steller Sea Lion	Eastern US	SI	A male Steller sea lion was observed with a circumferential neck entanglement caused by an unknown material.	SI	Constricting entanglement	Marine debris (unidentified)	N/A	N/A	N/A	P8a	1	0
ADFG	6/6/2017	SEAK	Steller Sea Lion	Eastern US	SI	An adult female Steller sea lion was observed with a circumferential neck entanglement caused by a packing band.	SI	Constricting entanglement	Marine debris (packing band)	N/A	N/A	N/A	P8a	1	0
ADFG	6/9/2017	SEAK	Steller Sea Lion	Eastern US	SI	A male Steller sea lion was observed with a circumferential neck entanglement caused by a packing band.	SI	Constricting entanglement	Marine debris (packing band)	N/A	N/A	N/A	P8a	1	0
ADFG	6/10/2017	SEAK	Steller Sea Lion	Eastern US	SI	A male Steller sea lion was observed with a circumferential neck entanglement caused by an unknown material.	SI	Constricting entanglement	Marine debris (unidentified)	N/A	N/A	N/A	P8a	1	0
WCGOP	6/13/2017	WC	Steller Sea Lion	Eastern US	NSI	A Steller sea lion was caught in trawl gear, brought aboard, and released from the net. Once free from the net the sea lion quickly jumped off the side of the boat and into the water. No visible signs of injury.	NSI	Entangled / entrapped	Fishery gear	Catch shares bottom trawl	Commercial	Trawl	P4	0	0
ADFG	6/16/2017	SEAK	Steller Sea Lion	Eastern US	SI	A female Steller sea lion was observed with a flasher at the edge of its mouth.	SI	Hooked	Fishery gear	Salmon hook and line	Unknown	Hook and line	P2	1	0
ADFG	6/19/2017	SEAK	Steller Sea Lion	Eastern US	NSI	An adult male Steller sea lion was observed with a hook in its cheek, outside of the teeth.	NSI	Hooked	Fishery gear	Unknown hook and line	Unknown	Hook and line	P5b	0	0
AKRO	6/23/2017	GOA	Steller Sea Lion	Eastern US	SI	A male Steller sea lion was hooked in the mouth with a circle hook on an Alaska halibut subsistence longline. The line was cut leaving the circle hook, gangion, and 10 feet of groundline trailing behind the animal.	SI	Hooked	Fishery gear	Halibut longline	Subsistence	Longline	P5a	1	0
ADFG	6/23/2017	SEAK	Steller Sea Lion	Eastern US	SI	An adult female Steller sea lion was observed with a circumferential neck entanglement caused by an unknown material.	SI	Constricting entanglement	Marine debris (unidentified)	N/A	N/A	N/A	P8a	1	0
ADFG	6/27/2017	SEAK	Steller Sea Lion	Eastern US	SI	An adult female Steller sea lion was observed with a circumferential neck entanglement caused by an unknown material.	SI	Constricting entanglement	Marine debris (unidentified)	N/A	N/A	N/A	P8a	1	0

Appendix Table 1.1 -- Human-marine mammal interaction records reviewed for injury and mortality, 2015-2019.

WCRO	7/1/2017	WC	Steller Sea Lion	Eastern US	SI	A subadult Steller sea lion was observed with a mass of gray trawl net wrapped around its neck.	SI	Constricting entanglement	Fishery gear	Unknown trawl	Unknown	Trawl	P8a	1	0
ADFG	7/2/2017	SEAK	Steller Sea Lion	Eastern US	SI	An adult female Steller sea lion was observed with a circumferential neck entanglement caused by a packing band.	SI	Constricting entanglement	Marine debris (packing band)	N/A	N/A	N/A	P8a	1	0
ADFG	7/2/2017	SEAK	Steller Sea Lion	Eastern US	SI	A subadult female Steller sea lion was observed with a circumferential neck entanglement caused by a packing band. This animal was darted and disentangled on 6/30/2018.	NSI	Constricting entanglement	Marine debris (packing band)	N/A	N/A	N/A	P7b	0	0
ADFG	7/2/2017	SEAK	Steller Sea Lion	Eastern US	SI	A male Steller sea lion was observed with a circumferential neck entanglement caused by an unknown material.	SI	Constricting entanglement	Marine debris (unidentified)	N/A	N/A	N/A	P8a	1	0
ADFG	7/3/2017	SEAK	Steller Sea Lion	Eastern US	SI	A male Steller sea lion was observed with a hook in its mouth with trailing baited line.	SI	Hooked	Fishery gear	Unknown hook and line	Unknown	Hook and line	P5a	1	0
ADFG	7/3/2017	SEAK	Steller Sea Lion	Eastern US	SI	A subadult Steller sea lion was observed with a flasher at the edge of its mouth.	SI	Hooked	Fishery gear	Salmon hook and line	Unknown	Hook and line	P2	1	0
ADFG	7/3/2017	SEAK	Steller Sea Lion	Eastern US	SI	A juvenile Steller sea lion was observed with a hook in its lip with trailing cord.	SI	Hooked	Fishery gear	Unknown hook and line	Unknown	Hook and line	P6	1	0
ADFG	7/3/2017	SEAK	Steller Sea Lion	Eastern US	NSI	An adult male Steller sea lion was observed with a hook in its lip, outside of the teeth.	NSI	Hooked	Fishery gear	Unknown hook and line	Unknown	Hook and line	P5b	0	0
ADFG	7/3/2017	SEAK	Steller Sea Lion	Eastern US	SI	An adult female Steller sea lion was observed with a circumferential neck entanglement caused by a packing band.	SI	Constricting entanglement	Marine debris (packing band)	N/A	N/A	N/A	P8a	1	0
ADFG	7/3/2017	SEAK	Steller Sea Lion	Eastern US	SI	An adult female Steller sea lion was observed with a circumferential neck entanglement caused by an unknown material.	SI	Constricting entanglement	Marine debris (unidentified)	N/A	N/A	N/A	P8a	1	0
ADFG	7/4/2017	SEAK	Steller Sea Lion	Eastern US	SI	An adult female Steller sea lion was observed with a circumferential neck entanglement caused by an unknown material.	SI	Constricting entanglement	Marine debris (unidentified)	N/A	N/A	N/A	P8a	1	0
ADFG	7/4/2017	SEAK	Steller Sea Lion	Eastern US	SI	An adult female Steller sea lion was observed with a circumferential neck entanglement caused by an unknown material.	SI	Constricting entanglement	Marine debris (unidentified)	N/A	N/A	N/A	P8a	1	0
AKRO	7/5/2017	SEAK	Steller Sea Lion	Eastern US	SI	A large male Steller sea lion was observed hauled out with a fishing lure hooked in its mouth. The flasher was hanging from its mouth.	SI	Hooked	Fishery gear	Salmon hook and line	Unknown	Hook and line	P5a	1	0
AKRO	7/5/2017	SEAK	Steller Sea Lion	Eastern US	SI	A subadult male Steller sea lion was observed hauled out with a flasher at the edge of its mouth. A disentanglement effort using a dart was unsuccessful.	SI	Hooked	Fishery gear	Salmon hook and line	Unknown	Hook and line	P2	1	0
ADFG	7/5/2017	SEAK	Steller Sea Lion	Eastern US	SI	A subadult Steller sea lion was observed with a flasher at the edge of its mouth with trailing monofilament line. A disentanglement attempt was unsuccessful.	SI	Hooked	Fishery gear	Salmon hook and line	Unknown	Hook and line	P2	1	0
ADFG	7/5/2017	SEAK	Steller Sea Lion	Eastern US	SI	An adult male Steller sea lion was observed with a circumferential neck entanglement caused by monofilament line.	SI	Constricting entanglement	Fishery gear	Salmon hook and line	Unknown	Hook and line	P8a	1	0
ADFG	7/5/2017	SEAK	Steller Sea Lion	Eastern US	SI	An adult male Steller sea lion was observed with a flasher at the edge of its mouth.	SI	Hooked	Fishery gear	Salmon hook and line	Unknown	Hook and line	P2	1	0
ADFG	7/5/2017	SEAK	Steller Sea Lion	Eastern US	SI	An adult female Steller sea lion was observed with a circumferential neck entanglement caused by an unknown material.	SI	Constricting entanglement	Marine debris (unidentified)	N/A	N/A	N/A	P8a	1	0

Appendix Table 1.1 -- Human-marine mammal interaction records reviewed for injury and mortality, 2015-2019.

AKRO	7/6/2017	SEAK	Steller Sea Lion	Eastern US	SI	A subadult male Steller sea lion with a circumferential neck entanglement caused by a thick rubber belt was darted and disentangled.	NSI	Constricting entanglement	Marine debris (unidentified)	N/A	N/A	N/A	P7b	0	0
ADFG	7/6/2017	SEAK	Steller Sea Lion	Eastern US	SI	A male Steller sea lion was observed with a circumferential neck entanglement caused by a fan belt. This animal was darted and disentangled on 7/6/2017.	NSI	Constricting entanglement	Marine debris	N/A	N/A	N/A	P7b	0	0
ADFG	7/6/2017	SEAK	Steller Sea Lion	Eastern US	SI	An adult Steller sea lion was observed with a flasher at the edge of its mouth.	SI	Hooked	Fishery gear	Salmon hook and line	Unknown	Hook and line	P2	1	0
ADFG	7/6/2017	SEAK	Steller Sea Lion	Eastern US	SI	A female Steller sea lion was observed with a flasher at the edge of its mouth.	SI	Hooked	Fishery gear	Salmon hook and line	Unknown	Hook and line	P2	1	0
ADFG	7/6/2017	SEAK	Steller Sea Lion	Eastern US	SI	A subadult male Steller sea lion was observed with a flasher at the edge of its mouth.	SI	Hooked	Fishery gear	Salmon hook and line	Unknown	Hook and line	P2	1	0
ADFG	7/7/2017	SEAK	Steller Sea Lion	Eastern US	SI	A male Steller sea lion was initially observed with a suspected circumferential neck entanglement caused by unidentified material on 07/07/2017. The animal was resighted on 07/08/2017 and darted on 7/04/2018 which revealed that the entanglement was gone leaving only a scar.	NSI	Constricting entanglement	Marine debris (unidentified)	N/A	N/A	N/A	P7b	0	0
AKRO	7/8/2017	SEAK	Steller Sea Lion	Eastern US	SI	A subadult male Steller sea lion was observed hauled out with a flasher at the edge of its mouth.	SI	Hooked	Fishery gear	Salmon hook and line	Unknown	Hook and line	P2	1	0
ADFG	7/9/2017	SEAK	Steller Sea Lion	Eastern US	SI	An adult female Steller sea lion was observed with a circumferential neck entanglement caused by an unidentified material.	SI	Constricting entanglement	Marine debris (unidentified)	N/A	N/A	N/A	P8a	1	0
AKRO	7/10/2017	SEAK	Steller Sea Lion	Eastern US	SI	An adult male Steller sea lion was observed hauled out with a flasher at the edge of its mouth with trailing monofilament line.	SI	Hooked	Fishery gear	Salmon hook and line	Unknown	Hook and line	P2	1	0
ADFG	7/10/2017	SEAK	Steller Sea Lion	Eastern US	NSI	A juvenile Steller sea lion was observed with a hook in the lip only, outside of the teeth.	NSI	Hooked	Fishery gear	Unknown hook and line	Unknown	Hook and line	P5b	0	0
ADFG	7/10/2017	SEAK	Steller Sea Lion	Eastern US	SI	A juvenile Steller sea lion was observed with a flasher at the edge of its mouth.	SI	Hooked	Fishery gear	Salmon hook and line	Unknown	Hook and line	P2	1	0
ADFG	7/10/2017	SEAK	Steller Sea Lion	Eastern US	SI	A juvenile Steller sea lion was observed with a flasher at the edge of its mouth.	SI	Hooked	Fishery gear	Salmon hook and line	Unknown	Hook and line	P2	1	0
ADFG	7/12/2017	SEAK	Steller Sea Lion	Eastern US	SI	An adult female Steller sea lion was observed with a circumferential neck entanglement caused by an unidentified material.	SI	Constricting entanglement	Marine debris (unidentified)	N/A	N/A	N/A	P8a	1	0
ADFG	7/12/2017	SEAK	Steller Sea Lion	Eastern US	SI	An adult female Steller sea lion was observed with a circumferential neck entanglement caused by an unidentified material.	SI	Constricting entanglement	Marine debris (unidentified)	N/A	N/A	N/A	P8a	1	0
AKRO	7/13/2017	SEAK	Steller Sea Lion	Eastern US	SI	A subadult male Steller sea lion with a flasher at the edge of its mouth was darted, captured, and the ingested fishing gear was removed. The animal was then released.	NSI	Hooked	Fishery gear	Salmon hook and line	Unknown	Hook and line	P5c	0	0
ADFG	7/13/2017	SEAK	Steller Sea Lion	Eastern US	SI	An adult male Steller sea lion was observed with a flasher at the edge of its mouth.	SI	Hooked	Fishery gear	Salmon hook and line	Unknown	Hook and line	P2	1	0
ADFG	7/13/2017	SEAK	Steller Sea Lion	Eastern US	SI	A Steller sea lion was observed entangled with line above the eyes and around the face and mouth.	SI	Constricting entanglement	Marine debris	N/A	N/A	N/A	P8a	1	0
AKRO	7/14/2017	SEAK	Steller Sea Lion	Eastern US	SI	A Steller sea lion was observed hauled out with a flasher at the edge of its mouth.	SI	Hooked	Fishery gear	Salmon hook and line	Unknown	Hook and line	P2	1	0

Appendix Table 1.1 -- Human-marine mammal interaction records reviewed for injury and mortality, 2015-2019.

ADFG	7/14/2017	SEAK	Steller Sea Lion	Eastern US	SI	A male Steller sea lion was observed with a flasher at the edge of its mouth.	SI	Hooked	Fishery gear	Salmon hook and line	Unknown	Hook and line	P2	1	0
ADFG	7/14/2017	SEAK	Steller Sea Lion	Eastern US	SI	A Steller sea lion was observed with a circumferential neck entanglement caused by a packing band.	SI	Constricting entanglement	Marine debris (packing band)	N/A	N/A	N/A	P8a	1	0
ADFG	7/14/2017	SEAK	Steller Sea Lion	Eastern US	SI	An adult female Steller sea lion was observed with a circumferential neck entanglement caused by a packing band.	SI	Constricting entanglement	Marine debris (packing band)	N/A	N/A	N/A	P8a	1	0
ADFG	7/15/2017	SEAK	Steller Sea Lion	Eastern US	SI	A male Steller sea lion was observed with a flasher at the edge of its mouth. A disentanglement effort removed the flasher but not the ingested hook.	SI	Hooked	Fishery gear	Salmon hook and line	Unknown	Hook and line	P2	1	0
ADFG	7/19/2017	SEAK	Steller Sea Lion	Eastern US	SI	A juvenile Steller sea lion was observed with a flasher at the edge of its mouth.	SI	Hooked	Fishery gear	Salmon hook and line	Unknown	Hook and line	P2	1	0
AKRO	7/27/2017	SEAK	Steller Sea Lion	Eastern US	SI	A Steller sea lion was observed hauled out with a flasher at the edge of its mouth.	SI	Hooked	Fishery gear	Salmon hook and line	Unknown	Hook and line	P2	1	0
AKRO	7/29/2017	SEAK	Steller Sea Lion	Eastern US	SI	A small Steller sea lion was observed with a fishing flasher trailing behind it, and it may have swallowed fishing gear.	SI	Hooked	Fishery gear	Salmon hook and line	Unknown	Hook and line	P2	1	0
WCGOP	7/30/2017	WC	Steller Sea Lion	Eastern US	DEAD	A dead Steller sea lion was caught in catch shares EM bottom trawl gear.	DEAD	Entangled / entrapped	Fishery gear	Catch shares EM bottom trawl	Commercial	Trawl	N/A	1	1
WCGOP	8/27/2017	WC	Steller Sea Lion	Eastern US	NSI	A Steller sea lion was caught in trawl gear, brought aboard the vessel, and released from the net. The crew yelled and sprayed the animal with the deck hose until it jumped off the trawl ramp. The animal seemed confused but had no visible signs of injury.	NSI	Entangled / entrapped	Fishery gear	Catch shares bottom trawl	Commercial	Trawl	P4	0	0
AKRO	8/30/2017	SEAK	Steller Sea Lion	Eastern US	SI	A Steller sea lion was observed hauled out with a flasher at the edge of its mouth.	SI	Hooked	Fishery gear	Salmon hook and line	Unknown	Hook and line	P2	1	0
ADFG	9/12/2017	SEAK	Steller Sea Lion	Eastern US	SI	An adult male Steller sea lion was observed with a circumferential neck entanglement caused by unidentified material.	SI	Constricting entanglement	Marine debris (unidentified)	N/A	N/A	N/A	P8a	1	0
AKRO	9/15/2017	SEAK	Steller Sea Lion	Eastern US	SI	An adult male Steller sea lion was observed hauled out with a flasher at the edge of its mouth.	SI	Hooked	Fishery gear	Salmon hook and line	Unknown	Hook and line	P2	1	0
AKRO	9/15/2017	SEAK	Steller Sea Lion	Eastern US	SI	A Steller sea lion was observed with a circumferential neck entanglement caused by unidentified marine debris.	SI	Constricting entanglement	Marine debris (unidentified)	N/A	N/A	N/A	P8a	1	0
A-SHOP	9/16/2017	WC	Steller Sea Lion	Eastern US	SI	A Steller sea lion was observed with a thin white line around its neck. The line was not believed to be constricting.	SI	Entangled / entrapped	Marine debris	N/A	N/A	N/A	P6	1	0
WCRO	9/23/2017	WC	Steller Sea Lion	Eastern US	SI	An adult female Steller sea lion with a flasher at the edge of its mouth was observed hauled out on a buoy.	SI	Hooked	Fishery gear	Unknown hook and line	Unknown	Hook and line	P2	1	0
A-SHOP	10/1/2017	WC	Steller Sea Lion	Eastern US	DEAD	A Steller sea lion was caught and killed by at-sea hake catcher processor midwater trawl gear.	DEAD	Entangled / entrapped	Fishery gear	At-sea hake mothership catcher vessel midwater trawl	Commercial	Trawl	N/A	1	1
A-SHOP	10/6/2017	WC	Steller Sea Lion	Eastern US	DEAD	A female Steller sea lion was caught and killed by at-sea hake catcher processor midwater trawl gear.	DEAD	Entangled / entrapped	Fishery gear	At-sea hake mothership catcher vessel midwater trawl	Commercial	Trawl	N/A	1	1
A-SHOP	10/8/2017	WC	Steller Sea Lion	Eastern US	DEAD	A female Steller sea lion was caught and killed by at-sea hake catcher processor midwater trawl gear.	DEAD	Entangled / entrapped	Fishery gear	At-sea hake catcher-processor midwater trawl	Commercial	Trawl	N/A	1	1

Appendix Table 1.1 -- Human-marine mammal interaction records reviewed for injury and mortality, 2015-2019.

WCGOP	10/23/2017	WC	Steller Sea Lion	Eastern US	NSI	A Steller sea lion was caught in catch shares EM trawl gear, brought aboard the vessel, and released from the net. The animal jumped overboard a few minutes after the codend was emptied. No visible signs of injury.	NSI	Entangled / entrapped	Fishery gear	Catch shares EM bottom trawl	Commercial	Trawl	P4	0	0
A-SHOP	10/23/2017	WC	Steller Sea Lion	Eastern US	DEAD	A Steller sea lion was caught and killed by at-sea hake catcher processor midwater trawl gear.	DEAD	Entangled / entrapped	Fishery gear	At-sea hake mothership catcher vessel midwater trawl	Commercial	Trawl	N/A	1	1
A-SHOP	10/24/2017	WC	Steller Sea Lion	Eastern US	DEAD	A Steller sea lion was caught and killed by at-sea hake midwater trawl gear.	DEAD	Entangled / entrapped	Fishery gear	At-sea hake mothership catcher vessel midwater trawl	Commercial	Trawl	N/A	1	1
A-SHOP	10/25/2017	WC	Steller Sea Lion	Eastern US	DEAD	A male Steller sea lion was caught and killed by at-sea hake catcher processor midwater trawl gear.	DEAD	Entangled / entrapped	Fishery gear	At-sea hake mothership catcher vessel midwater trawl	Commercial	Trawl	N/A	1	1
A-SHOP	10/25/2017	WC	Steller Sea Lion	Eastern US	DEAD	A Steller sea lion was caught and killed by at-sea hake catcher processor midwater trawl gear.	DEAD	Entangled / entrapped	Fishery gear	At-sea hake mothership catcher vessel midwater trawl	Commercial	Trawl	N/A	1	1
A-SHOP	10/27/2017	WC	Steller Sea Lion	Eastern US	DEAD	A Steller sea lion was caught and killed by at-sea hake catcher processor midwater trawl gear.	DEAD	Entangled / entrapped	Fishery gear	At-sea hake mothership catcher vessel midwater trawl	Commercial	Trawl	N/A	1	1
WCGOP	11/1/2017	WC	Steller Sea Lion	Eastern US	NSI	A Steller sea lion was caught in trawl gear, brought aboard the vessel, and released from the net. The animal left the vessel once the haul was dumped in the trawl alley. No visible signs of injury.	NSI	Entangled / entrapped	Fishery gear	Catch shares bottom trawl	Commercial	Trawl	P4	0	0
WCGOP	11/3/2017	WC	Steller Sea Lion	Eastern US	NSI	A Steller sea lion was caught in trawl gear, brought aboard the vessel, and released from the net. The animal left the vessel once the haul was dumped in the trawl alley. No visible signs of injury.	NSI	Entangled / entrapped	Fishery gear	Catch shares bottom trawl	Commercial	Trawl	P4	0	0
WCGOP	11/25/2017	WC	Steller Sea Lion	Eastern US	DEAD	A Steller sea lion was caught and killed in catch shares bottom trawl gear.	DEAD	Entangled / entrapped	Fishery gear	Catch shares bottom trawl	Commercial	Trawl	N/A	1	1
WCGOP	11/25/2017	WC	Steller Sea Lion	Eastern US	NSI	A Steller sea lion was caught in trawl gear, brought aboard the vessel, and released from the net. The animal jumped overboard as soon as the trawl net was dumped. No visible signs of injury.	NSI	Entangled / entrapped	Fishery gear	Catch shares bottom trawl	Commercial	Trawl	P4	0	0
WCGOP	12/7/2017	WC	Steller Sea Lion	Eastern US	NSI	Two Steller sea lions were caught in trawl gear, brought aboard the vessel, and released from the net. The animals jumped overboard as soon as the trawl net was dumped. No visible signs of injury. This record represents 1 of 2.	NSI	Entangled / entrapped	Fishery gear	Catch shares bottom trawl	Commercial	Trawl	P4	0	0
WCGOP	12/7/2017	WC	Steller Sea Lion	Eastern US	NSI	Two Steller sea lions were caught in trawl gear, brought aboard the vessel, and released from the net. The animals jumped overboard as soon as the trawl net was dumped. No visible signs of injury. This record represents 2 of 2.	NSI	Entangled / entrapped	Fishery gear	Catch shares bottom trawl	Commercial	Trawl	P4	0	0
WCGOP	12/12/2017	WC	Steller Sea Lion	Eastern US	NSI	A Steller sea lion was caught in catch shares EM trawl gear, brought aboard the vessel, and released from the net. The animal jumped overboard on its own following release from the net. No visible signs of injury.	NSI	Entangled / entrapped	Fishery gear	Catch shares EM bottom trawl	Commercial	Trawl	P4	0	0

Appendix Table 1.1 -- Human-marine mammal interaction records reviewed for injury and mortality, 2015-2019.

WCGOP	1/4/2018	WC	Steller Sea Lion	Eastern US	NSI	A Steller sea lion was caught in catch shares bottom trawl gear and brought on deck. The animal was released from the gear and exited the vessel on its own. No injuries were reported for this animal.	NSI	Entangled / entrapped	Fishery gear	Catch shares bottom trawl	Commercial	Trawl	P4	0	0
AKRO	1/16/2018	SEAK	Steller Sea Lion	Eastern US	SI	An adult female Steller sea lion was observed with a circumferential neck entanglement caused by an unknown material / marine debris.	SI	Constricting entanglement	Marine debris (unidentified)	N/A	N/A	N/A	P8a	1	0
AKRO	1/17/2018	SEAK	Steller Sea Lion	Eastern US	DEAD	A subadult female Steller sea lion was found dead due to a flipper entanglement caused by line / marine debris.	DEAD	Entangled / entrapped	Marine debris (unidentified)	N/A	N/A	N/A	N/A	1	0
WCGOP	1/30/2018	WC	Steller Sea Lion	Eastern US	DEAD	A male Steller sea lion was caught and killed in OA CA halibut bottom trawl gear.	DEAD	Entangled / entrapped	Fishery gear	OA CA halibut bottom trawl	Commercial	Trawl	N/A	1	1
WCGOP	1/31/2018	WC	Steller Sea Lion	Eastern US	NSI	A Steller sea lion was caught in catch shares bottom trawl gear. The vessel's crew cut a hole in the trawl net before bringing it onboard. The animal was then able to swim out of the net unharmed. No injuries were reported for this animal.	NSI	Entangled / entrapped	Fishery gear	Catch shares bottom trawl	Commercial	Trawl	P4	0	0
WCRO	2/26/2018	WC	Steller Sea Lion	Eastern US	DEAD	An adult male Steller sea lion was found dead in a state of moderate decomposition. The animal was necropsied and a fish hook was recovered from its esophagus. The necropsy also found significant signs of trauma, including bloody fluid in the thoracic cavity, areas of hemorrhage, and tissue/organ damage. The animal's intestines were twisted, but otherwise the sea lion had excellent body condition.	DEAD	Hooked	Fishery gear	Unknown hook and line	Unknown	Hook and line	N/A	1	0
WCGOP	3/7/2018	WC	Steller Sea Lion	Eastern US	NSI	A Steller sea lion was caught in catch shares EM bottom trawl gear and brought on deck. The animal was released from the gear and exited the vessel on its own. No injuries were reported for this animal.	NSI	Entangled / entrapped	Fishery gear	Catch shares EM bottom trawl	Commercial	Trawl	P4	0	0
WCGOP	3/9/2018	WC	Steller Sea Lion	Eastern US	NSI	A Steller sea lion was caught in catch shares bottom trawl gear and brought on deck. The animal was released from the gear, at which time it jumped off the boat. No injuries were reported for this animal.	NSI	Entangled / entrapped	Fishery gear	Catch shares bottom trawl	Commercial	Trawl	P4	0	0
AKRO	4/13/2018	SEAK	Steller Sea Lion	Eastern US	DEAD	An adult Steller sea lion was found dead of a gunshot wound to the head. An OLE investigation concluded that the shooting was intentional and non-subsistence.	DEAD	Shot	Projectile weapon	N/A	N/A	N/A	N/A	1	0
WCGOP	4/28/2018	WC	Steller Sea Lion	Eastern US	NSI	A Steller sea lion was caught in catch shares bottom trawl gear and brought on deck. The animal was released from the gear and jumped off the boat after 10 minutes. No injuries were reported for this animal.	NSI	Entangled / entrapped	Fishery gear	Catch shares bottom trawl	Commercial	Trawl	P4	0	0
WCRO	5/14/2018	WC	Steller Sea Lion	Eastern US	DEAD	A female Steller sea lion pup was found in a state of advanced decomposition. A necropsy was conducted and found that the animal's lower jaw and nasal area of the skull were broken. There was also hemorrhage and trauma on the head and neck. This animal's death is suspected to be human-caused.	DEAD	Body trauma	Other	N/A	N/A	N/A	N/A	1	0
ADFG	5/28/2018	SEAK	Steller Sea Lion	Eastern US	SI	An adult male Steller sea lion was observed with a circumferential neck entanglement caused by an unknown material / marine debris.	SI	Constricting entanglement	Marine debris (unidentified)	N/A	N/A	N/A	P8a	1	0

Appendix Table 1.1 -- Human-marine mammal interaction records reviewed for injury and mortality, 2015-2019.

ADFG	5/29/2018	SEAK	Steller Sea Lion	Eastern US	SI	An adult male Steller sea lion was observed with a circumferential neck entanglement caused by an unknown material / marine debris.	SI	Constricting entanglement	Marine debris (unidentified)	N/A	N/A	N/A	P8a	1	0
ADFG	5/29/2018	SEAK	Steller Sea Lion	Eastern US	SI	A subadult male Steller sea lion was observed with a circumferential neck entanglement caused by an unknown material / marine debris.	SI	Constricting entanglement	Marine debris (unidentified)	N/A	N/A	N/A	P8a	1	0
ADFG	6/4/2018	SEAK	Steller Sea Lion	Eastern US	SI	An adult female Steller sea lion was observed with a circumferential neck entanglement caused by an unknown material / marine debris. This animal was also observed nursing a pup. This record represents the mother.	SI	Constricting entanglement	Marine debris (unidentified)	N/A	N/A	N/A	P8a	1	0
ADFG	6/4/2018	SEAK	Steller Sea Lion	Eastern US	SI	An adult female Steller sea lion was observed with a circumferential neck entanglement caused by an unknown material / marine debris. This animal was also observed nursing a pup. This record represents the pup.	SI	Dependent animal with mother seriously injured	Marine debris (unidentified)	N/A	N/A	N/A	P14	1	0
ADFG	6/6/2018	SEAK	Steller Sea Lion	Eastern US	SI	An adult female Steller sea lion was observed with a circumferential neck entanglement caused by a white packing band. This animal was also observed with a pup. This record represents the mother.	SI	Constricting entanglement	Marine debris (packing band)	N/A	N/A	N/A	P8a	1	0
ADFG	6/6/2018	SEAK	Steller Sea Lion	Eastern US	SI	An adult female Steller sea lion was observed with a circumferential neck entanglement caused by a white packing band. This animal was also observed with a pup. This record represents the pup.	SI	Dependent animal with mother seriously injured	Marine debris (packing band)	N/A	N/A	N/A	P14	1	0
AKRO	6/13/2018	SEAK	Steller Sea Lion	Eastern US	SI	A Steller sea lion was observed with a circumferential neck entanglement caused by an unknown material / marine debris.	SI	Constricting entanglement	Marine debris (unidentified)	N/A	N/A	N/A	P8a	1	0
ADFG	6/14/2018	SEAK	Steller Sea Lion	Eastern US	SI	A subadult male Steller sea lion was observed with a circumferential neck entanglement caused by an unknown material / marine debris.	SI	Constricting entanglement	Marine debris (unidentified)	N/A	N/A	N/A	P8a	1	0
A-SHOP	6/17/2018	WC	Steller Sea Lion	Eastern US	DEAD	Two Steller sea lions were caught and killed by at-sea hake - midwater trawl gear. This record represents 1 of 2.	DEAD	Entangled / entrapped	Fishery gear	At-sea hake mothership catcher vessel midwater trawl	Commercial	Trawl	N/A	1	1
A-SHOP	6/17/2018	WC	Steller Sea Lion	Eastern US	DEAD	Two Steller sea lions were caught and killed by at-sea hake - midwater trawl gear. This record represents 2 of 2.	DEAD	Entangled / entrapped	Fishery gear	At-sea hake mothership catcher vessel midwater trawl	Commercial	Trawl	N/A	1	1
A-SHOP	6/20/2018	WC	Steller Sea Lion	Eastern US	DEAD	Two female Steller sea lions were caught and killed by at-sea hake - midwater trawl gear. This record represents 1 of 2.	DEAD	Entangled / entrapped	Fishery gear	At-sea hake mothership catcher vessel midwater trawl	Commercial	Trawl	N/A	1	1
A-SHOP	6/20/2018	WC	Steller Sea Lion	Eastern US	DEAD	Two female Steller sea lions were caught and killed by at-sea hake - midwater trawl gear. This record represents 2 of 2.	DEAD	Entangled / entrapped	Fishery gear	At-sea hake mothership catcher vessel midwater trawl	Commercial	Trawl	N/A	1	1
ADFG	6/27/2018	SEAK	Steller Sea Lion	Eastern US	SI	A subadult male Steller sea lion was observed with a circumferential neck entanglement caused by an unknown material / marine debris.	SI	Constricting entanglement	Marine debris (unidentified)	N/A	N/A	N/A	P8a	1	0
ADFG	6/27/2018	SEAK	Steller Sea Lion	Eastern US	SI	A Steller sea lion was observed with a circumferential neck entanglement caused by an unknown material / marine debris.	SI	Constricting entanglement	Marine debris (unidentified)	N/A	N/A	N/A	P8a	1	0

Appendix Table 1.1 -- Human-marine mammal interaction records reviewed for injury and mortality, 2015-2019.

ADFG	6/28/2018	SEAK	Steller Sea Lion	Eastern US	SI	A Steller sea lion was observed with a circumferential neck entanglement caused by an unknown material / marine debris.	SI	Constricting entanglement	Marine debris (unidentified)	N/A	N/A	N/A	P8a	1	0
ADFG	6/28/2018	SEAK	Steller Sea Lion	Eastern US	SI	A subadult male Steller sea lion was observed with a circumferential neck entanglement caused by a packing band. This animal was captured and disentangled on 06/30/2018.	NSI	Constricting entanglement	Marine debris (packing band)	N/A	N/A	N/A	P7b	0	0
ADFG	6/29/2018	SEAK	Steller Sea Lion	Eastern US	SI	A subadult male Steller sea lion ingested salmon hook and line gear and was observed with green flasher line hanging from its mouth.	SI	Hooked	Fishery gear	Salmon hook and line	Unknown	Hook and line	P2	1	0
ADFG	6/30/2018	SEAK	Steller Sea Lion	Eastern US	SI	A Steller sea lion was observed with a circumferential neck entanglement caused by an unknown material / marine debris.	SI	Constricting entanglement	Marine debris (unidentified)	N/A	N/A	N/A	P8a	1	0
ADFG	6/30/2018	SEAK	Steller Sea Lion	Eastern US	SI	An adult female Steller sea lion was observed with a circumferential neck entanglement caused by an unknown material / marine debris.	SI	Constricting entanglement	Marine debris (unidentified)	N/A	N/A	N/A	P8a	1	0
ADFG	7/1/2018	SEAK	Steller Sea Lion	Eastern US	SI	A juvenile Steller sea lion was observed with a constricting monofilament line entanglement around the lower hips/abdomen.	SI	Constricting entanglement	Marine debris	N/A	N/A	N/A	P8a	1	0
ADFG	7/2/2018	SEAK	Steller Sea Lion	Eastern US	SI	An adult male Steller sea lion was observed with a silver flasher at the edge of its mouth.	SI	Hooked	Fishery gear	Salmon hook and line	Unknown	Hook and line	P2	1	0
ADFG	7/2/2018	SEAK	Steller Sea Lion	Eastern US	SI	A subadult male Steller sea lion was observed with a silver flasher at the edge of its mouth.	SI	Hooked	Fishery gear	Salmon hook and line	Unknown	Hook and line	P2	1	0
ADFG	7/3/2018	SEAK	Steller Sea Lion	Eastern US	SI	An adult male Steller sea lion was observed with a flasher at the edge of its mouth. The sea lion also had an eye injury.	SI	Hooked	Fishery gear	Salmon hook and line	Unknown	Hook and line	P2	1	0
ADFG	7/3/2018	SEAK	Steller Sea Lion	Eastern US	SI	A juvenile Steller sea lion was observed with a circumferential neck entanglement caused by an unknown material / marine debris.	SI	Constricting entanglement	Marine debris (unidentified)	N/A	N/A	N/A	P8a	1	0
ADFG	7/3/2018	SEAK	Steller Sea Lion	Eastern US	SI	An adult female Steller sea lion was observed with a circumferential neck entanglement caused by an unknown material / marine debris.	SI	Constricting entanglement	Marine debris (unidentified)	N/A	N/A	N/A	P8a	1	0
ADFG	7/3/2018	SEAK	Steller Sea Lion	Eastern US	SI	An adult female Steller sea lion was observed with a circumferential neck entanglement caused by an unknown material / marine debris.	SI	Constricting entanglement	Marine debris (unidentified)	N/A	N/A	N/A	P8a	1	0
ADFG	7/3/2018	SEAK	Steller Sea Lion	Eastern US	SI	An adult female Steller sea lion was observed with a circumferential neck entanglement caused by an unknown material / marine debris. This animal was also observed nursing a pup. This record represents the mother.	SI	Constricting entanglement	Marine debris (unidentified)	N/A	N/A	N/A	P8a	1	0
ADFG	7/3/2018	SEAK	Steller Sea Lion	Eastern US	SI	An adult female Steller sea lion was observed with a circumferential neck entanglement caused by an unknown material / marine debris. This animal was also observed nursing a pup. This record represents the pup.	SI	Dependent animal with mother seriously injured	Marine debris (unidentified)	N/A	N/A	N/A	P14	1	0
ADFG	7/4/2018	SEAK	Steller Sea Lion	Eastern US	SI	An adult female Steller sea lion was observed with a circumferential neck entanglement caused by an unknown material / marine debris. This animal was also observed nursing a juvenile.	SI	Constricting entanglement	Marine debris (unidentified)	N/A	N/A	N/A	P8a	1	0

Appendix Table 1.1 -- Human-marine mammal interaction records reviewed for injury and mortality, 2015-2019.

ADFG	7/4/2018	SEAK	Steller Sea Lion	Eastern US	SI	An adult female Steller sea lion was observed with a circumferential neck entanglement caused by an unknown material / marine debris.	SI	Constricting entanglement	Marine debris (unidentified)	N/A	N/A	N/A	P8a	1	0
ADFG	7/4/2018	SEAK	Steller Sea Lion	Eastern US	SI	A Steller sea lion was observed with a green and red flasher at the edge of its mouth.	SI	Hooked	Fishery gear	Salmon hook and line	Unknown	Hook and line	P2	1	0
ADFG	7/5/2018	SEAK	Steller Sea Lion	Eastern US	SI	An adult male Steller sea lion was observed to be hooked with a white fishing lure at the edge of its mouth.	SI	Hooked	Fishery gear	Unknown	Unknown	Unknown	P5a	1	0
ADFG	7/5/2018	SEAK	Steller Sea Lion	Eastern US	SI	An adult male Steller sea lion was observed with a circumferential neck entanglement caused by an unknown material / marine debris.	SI	Constricting entanglement	Marine debris (unidentified)	N/A	N/A	N/A	P8a	1	0
ADFG	7/5/2018	SEAK	Steller Sea Lion	Eastern US	SI	An adult male Steller sea lion was observed with a blue flasher at the edge of its mouth.	SI	Hooked	Fishery gear	Salmon hook and line	Unknown	Hook and line	P2	1	0
ADFG	7/5/2018	SEAK	Steller Sea Lion	Eastern US	SI	A Steller sea lion was observed with a circumferential neck entanglement caused by an unknown material / marine debris.	SI	Constricting entanglement	Marine debris (unidentified)	N/A	N/A	N/A	P8a	1	0
ADFG	7/5/2018	SEAK	Steller Sea Lion	Eastern US	SI	A subadult male Steller sea lion was observed with a green and red flasher at the edge of its mouth.	SI	Hooked	Fishery gear	Salmon hook and line	Unknown	Hook and line	P2	1	0
ADFG	7/5/2018	SEAK	Steller Sea Lion	Eastern US	SI	An adult male Steller sea lion was observed with a flasher, a 2 inch orange ball, and 20 - 30 inches of line hanging from its mouth.	SI	Hooked	Fishery gear	Salmon hook and line	Unknown	Hook and line	P2	1	0
ADFG	7/6/2018	SEAK	Steller Sea Lion	Eastern US	SI	An adult male Steller sea lion was observed with a circumferential neck entanglement caused by an unknown material / marine debris.	SI	Constricting entanglement	Marine debris (unidentified)	N/A	N/A	N/A	P8a	1	0
ADFG	7/6/2018	SEAK	Steller Sea Lion	Eastern US	SI	An adult female Steller sea lion was observed with a circumferential neck entanglement caused by an unknown material / marine debris.	SI	Constricting entanglement	Marine debris (unidentified)	N/A	N/A	N/A	P8a	1	0
ADFG	7/7/2018	SEAK	Steller Sea Lion	Eastern US	SI	An adult male Steller sea lion was observed with a circumferential neck entanglement caused by an unknown material / marine debris.	SI	Constricting entanglement	Marine debris (unidentified)	N/A	N/A	N/A	P8a	1	0
ADFG	7/7/2018	SEAK	Steller Sea Lion	Eastern US	SI	An adult female Steller sea lion was observed with a circumferential neck entanglement caused by an unknown material / marine debris.	SI	Constricting entanglement	Marine debris (unidentified)	N/A	N/A	N/A	P8a	1	0
ADFG	7/8/2018	SEAK	Steller Sea Lion	Eastern US	SI	A subadult male Steller sea lion ingested fishery gear and was observed with green monofilament line hanging from its mouth.	SI	Hooked	Fishery gear	Unknown	Unknown	Unknown	P2	1	0
ADFG	7/9/2018	SEAK	Steller Sea Lion	Eastern US	SI	A subadult male Steller sea lion was observed with a circumferential neck entanglement caused by an unknown material / marine debris.	SI	Constricting entanglement	Marine debris (unidentified)	N/A	N/A	N/A	P8a	1	0
AKRO	8/12/2018	SEAK	Steller Sea Lion	Eastern US	SI	A Steller sea lion ingested halibut fishery gear and was observed with a halibut hook, line, gangion, and weight hanging from its mouth.	SI	Hooked	Fishery gear	Unknown halibut	Unknown	Longline	P2	1	0
AKRO	8/20/2018	SEAK	Steller Sea Lion	Eastern US	SI	A subadult Steller sea lion was observed with a flasher at the edge of its mouth. This animal was captured and disentangled, but an ingested hook was likely left in the animal's GI tract.	SI	Hooked	Fishery gear	Salmon hook and line	Unknown	Hook and line	P2	1	0

Appendix Table 1.1 -- Human-marine mammal interaction records reviewed for injury and mortality, 2015-2019.

WCRO	9/4/2018	WC	Steller Sea Lion	Eastern US	DEAD	An adult male Steller sea lion hybrid was found dead in an advanced state of decomposition. A necropsy was conducted and found that the animal appeared to have excellent body condition with heavy trauma and possible pellet holes in neck with associated hemorrhage. The animal's skull appeared to be that of a Steller sea lion but the baculum was clearly a California sea lion. This animal has been categorized as a Steller sea lion for the purpose of this report.	DEAD	Shot	Projectile weapon	N/A	N/A	N/A	N/A	1	0
AKRO	9/14/2018	SEAK	Steller Sea Lion	Eastern US	SI	A Steller sea lion was observed with a flasher at the edge of its mouth. The animal was isolated and appeared in distress.	SI	Hooked	Fishery gear	Salmon hook and line	Unknown	Hook and line	P2	1	0
A-SHOP	9/16/2018	WC	Steller Sea Lion	Eastern US	DEAD	A female Steller sea lion was caught and killed by at-sea hake catcher processor midwater trawl gear.	DEAD	Entangled / entrapped	Fishery gear	At-sea hake catcher-processor midwater trawl	Commercial	Trawl	N/A	1	1
A-SHOP	9/25/2018	WC	Steller Sea Lion	Eastern US	DEAD	A Steller sea lion was caught and killed by at-sea hake - midwater trawl gear.	DEAD	Entangled / entrapped	Fishery gear	At-sea hake mothership catcher vessel midwater trawl	Commercial	Trawl	N/A	1	1
WCGOP	9/30/2018	WC	Steller Sea Lion	Eastern US	NSI	A Steller sea lion was caught in catch shares bottom trawl gear and brought on deck. The animal was released from the gear and exited the vessel on its own. No injuries were reported for this animal.	NSI	Entangled / entrapped	Fishery gear	Catch shares bottom trawl	Commercial	Trawl	P4	0	0
AKRO	10/2/2018	SEAK	Steller Sea Lion	Eastern US	SI	A subadult male Steller sea lion was observed with a circumferential neck entanglement caused by an unknown material / marine debris.	SI	Constricting entanglement	Marine debris (unidentified)	N/A	N/A	N/A	P8a	1	0
AKRO	10/2/2018	SEAK	Steller Sea Lion	Eastern US	SI	A subadult Steller sea lion was observed with a flasher at the edge of its mouth. By 10/12/2018, the animal started to look in poor health. There were no reports thereafter.	SI	Hooked	Fishery gear	Salmon hook and line	Unknown	Hook and line	P2	1	0
A-SHOP	10/14/2018	WC	Steller Sea Lion	Eastern US	DEAD	A female Steller sea lion was caught and killed by at-sea hake catcher processor midwater trawl gear.	DEAD	Entangled / entrapped	Fishery gear	At-sea hake catcher-processor midwater trawl	Commercial	Trawl	N/A	1	1
A-SHOP	10/18/2018	WC	Steller Sea Lion	Eastern US	DEAD	A male Steller sea lion was caught and killed by at-sea hake catcher processor midwater trawl gear.	DEAD	Entangled / entrapped	Fishery gear	At-sea hake catcher-processor midwater trawl	Commercial	Trawl	N/A	1	1
A-SHOP	10/18/2018	WC	Steller Sea Lion	Eastern US	NSI	A Steller sea lion was caught in at-sea hake catcher processor midwater trawl gear, brought aboard the vessel, and released from the net. After the release the animal disembarked the vessel. There were no reports of injury to the animal.	NSI	Entangled / entrapped	Fishery gear	At-sea hake catcher-processor midwater trawl	Commercial	Trawl	P4	0	0
A-SHOP	10/18/2018	WC	Steller Sea Lion	Eastern US	SI	A female Steller sea lion was caught in at-sea hake catcher processor midwater trawl gear and brought on deck. The animal was still breathing and moving around slightly but had white foam coming from its mouth. No other visible injuries were observed, but it was reported that it is unlikely that the animal made it out of the encounter unharmed. The animal was released overboard, but the observer was unsure if it survived the encounter.	SI	Entangled / entrapped	Fishery gear	At-sea hake catcher-processor midwater trawl	Commercial	Trawl	P4	1	1

Appendix Table 1.1 -- Human-marine mammal interaction records reviewed for injury and mortality, 2015-2019.

A-SHOP	10/22/2018	WC	Steller Sea Lion	Eastern US	DEAD	A female Steller sea lion was caught and killed by at-sea hake - midwater trawl gear.	DEAD	Entangled / entrapped	Fishery gear	At-sea hake mothership catcher vessel midwater trawl	Commercial	Trawl	N/A	1	1
A-SHOP	10/26/2018	WC	Steller Sea Lion	Eastern US	DEAD	A female Steller sea lion was caught and killed by at-sea hake - midwater trawl gear.	DEAD	Entangled / entrapped	Fishery gear	At-sea hake mothership catcher vessel midwater trawl	Commercial	Trawl	N/A	1	1
A-SHOP	10/28/2018	WC	Steller Sea Lion	Eastern US	DEAD	A female Steller sea lion was caught and killed by at-sea hake - midwater trawl gear.	DEAD	Entangled / entrapped	Fishery gear	At-sea hake mothership catcher vessel midwater trawl	Commercial	Trawl	N/A	1	1
WCGOP	11/3/2018	WC	Steller Sea Lion	Eastern US	NSI	Two Steller sea lions were caught in catch shares bottom trawl gear and brought on deck (2 different hauls). The animals were released from the gear and exited the vessel on their own. No injuries were reported for these animals. This record represents 1 of 2.	NSI	Entangled / entrapped	Fishery gear	Catch shares bottom trawl	Commercial	Trawl	P4	0	0
WCGOP	11/3/2018	WC	Steller Sea Lion	Eastern US	NSI	Two Steller sea lions were caught in catch shares bottom trawl gear and brought on deck (2 different hauls). The animals were released from the gear and exited the vessel on their own. No injuries were reported for these animals. This record represents 2 of 2.	NSI	Entangled / entrapped	Fishery gear	Catch shares bottom trawl	Commercial	Trawl	P4	0	0
WCGOP	11/12/2018	WC	Steller Sea Lion	Eastern US	NSI	A Steller sea lion was caught twice (2 different hauls) in catch shares bottom trawl gear and brought on deck. On both occasions the animal was released from the gear and exited the vessel on its own. No injuries were reported for this animal on either occasion. This record represents 1 of 2.	NSI	Entangled / entrapped	Fishery gear	Catch shares bottom trawl	Commercial	Trawl	P4	0	0
WCGOP	11/12/2018	WC	Steller Sea Lion	Eastern US	NSI	A Steller sea lion was caught twice (2 different hauls) in catch shares bottom trawl gear and brought on deck. On both occasions the animal was released from the gear and exited the vessel on its own. No injuries were reported for this animal on either occasion. This record represents 2 of 2.	NSI	Entangled / entrapped	Fishery gear	Catch shares bottom trawl	Commercial	Trawl	P4	0	0
A-SHOP	11/19/2018	WC	Steller Sea Lion	Eastern US	NSI	A Steller sea lion was caught in at-sea hake catcher processor midwater trawl gear, brought aboard the vessel, and released from the net. After the release the animal disembarked the vessel via the stern trawl ramp. The animal was reported as being alive and mobile, and there were no reports of injury to the animal.	NSI	Entangled / entrapped	Fishery gear	At-sea hake catcher-processor midwater trawl	Commercial	Trawl	P4	0	0
A-SHOP	11/20/2018	WC	Steller Sea Lion	Eastern US	NSI	A Steller sea lion was caught in midwater rockfish EM trawl gear and brought on deck. The animal was released from the gear at which time it jumped off the boat. No injuries were reported for this animal.	NSI	Entangled / entrapped	Fishery gear	Midwater rockfish EM trawl	Commercial	Trawl	P4	0	0
WCRO	1/23/2019	WC	Steller Sea Lion	Eastern US	DEAD	An adult female Steller sea lion was found dead in a state of moderate decomposition. A necropsy was conducted and found that the animal was pregnant, appeared to have good body condition, and died of wounds consistent with a gunshot to the posterior abdomen/pelvic area with associated hemorrhage.	DEAD	Shot	Projectile weapon	N/A	N/A	N/A	N/A	1	0

Appendix Table 1.1 -- Human-marine mammal interaction records reviewed for injury and mortality, 2015-2019.

A-SHOP	2/4/2019	WC	Steller Sea Lion	Eastern US	NSI	A Steller sea lion was caught in midwater rockfish EM trawl gear and brought on deck. The animal was released from the gear, at which time it jumped off the boat. No injuries were reported for this animal.	NSI	Entangled / entrapped	Fishery gear	Midwater Rockfish EM - Midwater Trawl	Commercial	Trawl	P4	0	0
WCGOP	2/7/2019	WC	Steller Sea Lion	Eastern US	DEAD	A male Steller sea lion was caught and killed in OA CA halibut bottom trawl gear.	DEAD	Entangled / entrapped	Fishery gear	OA CA halibut bottom trawl	Commercial	Trawl	N/A	1	1
WCGOP	3/10/2019	WC	Steller Sea Lion	Eastern US	DEAD	An adult Steller sea lion was caught and killed by OA CA Halibut bottom trawl gear.	DEAD	Entangled / entrapped	Fishery gear	OA CA halibut bottom trawl	Commercial	Trawl	N/A	1	1
WCRO	3/22/2019	WC	Steller Sea Lion	Eastern US	DEAD	An adult female Steller sea lion was found dead in a state of advanced decomposition. A necropsy found that the animal was pregnant, appeared to have good body condition, and had a gunshot wound in the abdomen and into the uterus and stomach with associated hemorrhage.	DEAD	Shot	Projectile weapon	N/A	N/A	N/A	N/A	1	0
WCRO	3/28/2019	WC	Steller Sea Lion	Eastern US	DEAD	A yearling male Steller sea lion was found dead in a state of moderate decomposition. A necropsy found that the animal appeared to have poor body condition with gouges and scrapes associated with extensive dorsal hemorrhage along the back and around the neck, as well as extensive trauma on the left side of the head and internal bleeding. The examiner believed the injuries were consistent with a fishery interaction.	DEAD	Entangled / entrapped	Fishery gear	Unknown	Unknown	Unknown	N/A	1	0
WCRO	3/29/2019	WC	Steller Sea Lion	Eastern US	DEAD	A yearling male Steller sea lion was found dead in a state of moderate decomposition. A necropsy found that the animal appeared to have good body condition with line marks across the stomach and associated bruising on the abdomen, hemorrhage on the head and dorsal side, internal bleeding, fluid in the lungs, and twisted intestines. The examiner believed the injuries were consistent with a fishery interaction.	DEAD	Entangled / entrapped	Fishery gear	Unknown	Unknown	Unknown	N/A	1	0
ADFG	3/30/2019	SEAK	Steller Sea Lion	Eastern US	SI	An adult female Steller sea lion was observed with a circumferential neck entanglement caused by an unknown material / marine debris.	SI	Constricting entanglement	Marine debris (unidentified)	N/A	N/A	N/A	P8a	1	0
WCGOP	4/2/2019	WC	Steller Sea Lion	Eastern US	DEAD	An adult female Steller sea lion was caught and killed by OA CA Halibut bottom trawl gear.	DEAD	Entangled / entrapped	Fishery gear	OA CA halibut bottom trawl	Commercial	Trawl	N/A	1	1
WCRO	4/9/2019	WC	Steller Sea Lion	Eastern US	DEAD	An adult male Steller sea lion was found fresh dead. A necropsy found that the animal died of wounds consistent with a gunshot to the neck.	DEAD	Shot	Projectile weapon	N/A	N/A	N/A	N/A	1	0
WCRO	4/16/2019	WC	Steller Sea Lion	Eastern US	DEAD	A yearling male Steller sea lion was found in a state of moderate decomposition. A necropsy found that the animal had excellent body condition with external rub marks, hemorrhage, and trauma on its body, especially from the head to the foreflippers. Blood was found at the back of the neck and around the posterior brain. The examiner believed the injuries were consistent with a fishery interaction.	DEAD	Entangled / entrapped	Fishery gear	Unknown	Unknown	Unknown	N/A	1	0

Appendix Table 1.1 -- Human-marine mammal interaction records reviewed for injury and mortality, 2015-2019.

ADFG	4/17/2019	SEAK	Steller Sea Lion	Eastern US	SI	An adult female Steller sea lion with a nursing juvenile was observed with a circumferential neck entanglement caused by an unknown material / marine debris. Based on its age, the juvenile was presumed to be feeding on its own to some degree and was likely not entirely dependent on the mother, so it is not considered a separate serious injury.	SI	Constricting entanglement	Marine debris (unidentified)	N/A	N/A	N/A	P8a	1	0
WCGOP	4/18/2019	WC	Steller Sea Lion	Eastern US	DEAD	A Steller sea lion was caught and killed in catch shares bottom trawl gear.	DEAD	Entangled / entrapped	Fishery gear	Catch shares bottom trawl	Commercial	Trawl	N/A	1	1
WCRO	4/28/2019	WC	Steller Sea Lion	Eastern US	DEAD	An adult male Steller sea lion was found in a state of advanced decomposition to the point where a necropsy could not be performed on the body. The right rear flipper was missing. Only the head was collected for necropsy and 13 bullet pellets were found inside the skull. The animal was assumed to have died from gunshot wounds.	DEAD	Shot	Projectile weapon	N/A	N/A	N/A	N/A	1	0
WCRO	5/9/2019	WC	Steller Sea Lion	Eastern US	DEAD	An adult male Steller sea lion was found in a state of advanced decomposition. A necropsy found that the animal's teeth had been removed by unknown person(s), the skull was exposed, there was deep hemorrhage at the pelvis, neck, and upper back area, and there was a bullet/pellet hole in the esophagus with associated blood in the stomach.	DEAD	Shot	Projectile weapon	N/A	N/A	N/A	N/A	1	0
WCRO	5/9/2019	WC	Steller Sea Lion	Eastern US	DEAD	An adult female Steller sea lion was found in a state of moderate decomposition. A necropsy found that the animal was pregnant, appeared to have excellent body condition, and had a gunshot wound to the abdomen/pelvic area with associated hemorrhage to the colon. There was no sign of illness.	DEAD	Shot	Projectile weapon	N/A	N/A	N/A	N/A	1	0
ADFG	6/4/2019	SEAK	Steller Sea Lion	Eastern US	SI	An adult female Steller sea lion was observed with a circumferential neck entanglement caused by an unknown material / marine debris.	SI	Constricting entanglement	Marine debris (unidentified)	N/A	N/A	N/A	P8a	1	0
ADFG	6/4/2019	SEAK	Steller Sea Lion	Eastern US	SI	An adult female Steller sea lion was observed with an orange flasher at the edge of its mouth.	SI	Hooked	Fishery gear	Salmon hook and line	Unknown	Hook and line	P2	1	0
ADFG	6/10/2019	SEAK	Steller Sea Lion	Eastern US	SI	An adult female Steller sea lion was observed with a circumferential neck entanglement caused by a packing band.	SI	Constricting entanglement	Marine debris (packing band)	N/A	N/A	N/A	P8a	1	0
ADFG	6/13/2019	SEAK	Steller Sea Lion	Eastern US	SI	An adult female Steller sea lion was observed with a circumferential neck entanglement caused by an unknown material / marine debris.	SI	Constricting entanglement	Marine debris (unidentified)	N/A	N/A	N/A	P8a	1	0
ADFG	6/14/2019	SEAK	Steller Sea Lion	Eastern US	SI	An adult female Steller sea lion was observed with a circumferential neck entanglement caused by an unknown material / marine debris.	SI	Constricting entanglement	Marine debris (unidentified)	N/A	N/A	N/A	P8a	1	0
ADFG	6/21/2019	SEAK	Steller Sea Lion	Eastern US	SI	A subadult male Steller sea lion was observed with a circumferential neck entanglement caused by an unknown material / marine debris.	SI	Constricting entanglement	Marine debris (unidentified)	N/A	N/A	N/A	P8a	1	0
ADFG	6/28/2019	SEAK	Steller Sea Lion	Eastern US	SI	An adult female Steller sea lion was observed with a circumferential neck entanglement caused by an unknown material / marine debris.	SI	Constricting entanglement	Marine debris (unidentified)	N/A	N/A	N/A	P8a	1	0

Appendix Table 1.1 -- Human-marine mammal interaction records reviewed for injury and mortality, 2015-2019.

ADFG	6/28/2019	SEAK	Steller Sea Lion	Eastern US	SI	An adult male Steller sea lion ingested fishery gear and was observed with a blue flasher with 4 feet of line hanging from the left side of the mouth as well as four small puncture wounds and a slash scar on its left side.	SI	Hooked	Fishery gear	Salmon hook and line	Unknown	Hook and line	P2	1	0
ADFG	6/29/2019	SEAK	Steller Sea Lion	Eastern US	SI	An adult female Steller sea lion was observed with a circumferential neck entanglement caused by an unknown material / marine debris, possibly a white packing band.	SI	Constricting entanglement	Marine debris (packing band)	N/A	N/A	N/A	P8a	1	0
ADFG	6/29/2019	SEAK	Steller Sea Lion	Eastern US	SI	An adult female Steller sea lion was observed with a circumferential neck entanglement caused by an unknown material / marine debris.	SI	Constricting entanglement	Marine debris (unidentified)	N/A	N/A	N/A	P8a	1	0
ADFG	7/3/2019	SEAK	Steller Sea Lion	Eastern US	SI	An adult male Steller sea lion ingested fishery gear and was observed with a long piece of monofilament line hanging from its mouth.	SI	Hooked	Fishery gear	Unknown hook and line	Unknown	Hook and line	P2	1	0
ADFG	7/3/2019	SEAK	Steller Sea Lion	Eastern US	SI	A juvenile Steller sea lion ingested fishery gear and was observed with an orange and silver flasher with 2 feet of attached line hanging from its mouth	SI	Hooked	Fishery gear	Salmon hook and line	Unknown	Hook and line	P2	1	0
ADFG	7/4/2019	SEAK	Steller Sea Lion	Eastern US	SI	A juvenile Steller sea lion was observed with a circle hook in the right side of its mouth.	SI	Hooked	Fishery gear	Unknown hook and line	Unknown	Hook and line	P2	1	0
ADFG	7/5/2019	SEAK	Steller Sea Lion	Eastern US	SI	An adult female Steller sea lion was observed with a circumferential neck entanglement from a white packing band that was not cutting into the skin. The animal was later observed to have self-released from the entanglement.	NSI	Constricting entanglement	Marine debris (packing band)	N/A	N/A	N/A	P7b	0	0
ADFG	7/5/2019	SEAK	Steller Sea Lion	Eastern US	SI	A subadult male Steller sea lion ingested fishery gear and was observed with a green and gold flasher tight to the right side of its mouth with at least 5 feet of trailing line.	SI	Hooked	Fishery gear	Salmon hook and line	Unknown	Hook and line	P2	1	0
ADFG	7/8/2019	SEAK	Steller Sea Lion	Eastern US	SI	An adult male Steller sea lion was observed with a circumferential neck entanglement caused by an unknown material / marine debris, possibly heavy monofilament or a ganglion.	SI	Constricting entanglement	Fishery gear	Unknown	Unknown	Unknown	P8a	1	0
ADFG	7/8/2019	SEAK	Steller Sea Lion	Eastern US	SI	A juvenile Steller sea lion ingested fishery gear and was observed with an orange flasher near the left side of its mouth	SI	Hooked	Fishery gear	Salmon hook and line	Unknown	Hook and line	P2	1	0
ADFG	7/9/2019	SEAK	Steller Sea Lion	Eastern US	SI	A subadult male Steller sea lion was observed with a circumferential neck entanglement caused by an unknown material / marine debris.	SI	Constricting entanglement	Marine debris (unidentified)	N/A	N/A	N/A	P8a	1	0
AKRO	7/10/2019	GOA	Steller Sea Lion	Eastern US	SI	A Steller sea lion was observed hauled out with a red and white flasher hanging from the edge of its mouth.	SI	Hooked	Fishery gear	Salmon hook and line	Unknown	Hook and line	P2	1	0
ADFG	7/10/2019	SEAK	Steller Sea Lion	Eastern US	SI	An adult female Steller sea lion was observed with a circumferential neck entanglement caused by an unknown material / marine debris, possibly monofilament.	SI	Constricting entanglement	Marine debris (unidentified)	N/A	N/A	N/A	P8a	1	0
ADFG	7/10/2019	SEAK	Steller Sea Lion	Eastern US	SI	An adult male Steller sea lion ingested fishery gear and was observed with a silver flasher tight against the right side of its mouth.	SI	Hooked	Fishery gear	Salmon hook and line	Unknown	Hook and line	P2	1	0

Appendix Table 1.1 -- Human-marine mammal interaction records reviewed for injury and mortality, 2015-2019.

ADFG	7/11/2019	SEAK	Steller Sea Lion	Eastern US	SI	A subadult male Steller sea lion was observed with a circumferential neck entanglement caused by an unknown material / marine debris.	SI	Constricting entanglement	Marine debris (unidentified)	N/A	N/A	N/A	P8a	1	0
AKRO	7/14/2019	SEAK	Steller Sea Lion	Eastern US	SI	A Steller sea lion was observed hauled out with a white or silver flasher close to its head, covering part of the face. The location of hook was not determined but it was believed to be in the head (not in the mouth or ingested) with the flasher hanging next to the face. Given the likely location of the hooking, trailing gear has the potential to interfere with feeding, be ingested, accumulate drag, or become snagged on something in the environment, anchoring the animal.	SI	Hooked	Fishery gear	Salmon hook and line	Unknown	Hook and line	P6	1	0
WCGOP	7/21/2019	WC	Steller Sea Lion	Eastern US	DEAD	A Steller sea lion was caught and killed by Catch Shares EM bottom trawl gear.	DEAD	Entangled / entrapped	Fishery gear	Catch shares EM bottom trawl	Commercial	Trawl	N/A	1	1
AKRO	8/24/2019	SEAK	Steller Sea Lion	Eastern US	SI	An adult female Steller sea lion was observed hauled out with silver flasher tight against the edge of its mouth.	SI	Hooked	Fishery gear	Salmon hook and line	Unknown	Hook and line	P2	1	0
AKRO	8/24/2019	SEAK	Steller Sea Lion	Eastern US	SI	A Steller sea lion was observed hauled out with a silver flasher with an orange rim at the edge of its mouth.	SI	Hooked	Fishery gear	Salmon hook and line	Unknown	Hook and line	P2	1	0
AKRO	8/30/2019	SEAK	Steller Sea Lion	Eastern US	SI	A Steller sea lion was observed hauled out with a flasher at the edge of its mouth.	SI	Hooked	Fishery gear	Salmon hook and line	Unknown	Hook and line	P2	1	0
WCRO	9/1/2019	WC	Steller Sea Lion	Eastern US	SI	A subadult male Steller sea lion was observed with a flasher connected to fishing line hanging from the inside right corner of its mouth. The animal was sedated and the flasher and line were removed as close to the mouth as possible. There is no information regarding the status of the hook.	SI	Hooked	Fishery gear	Unknown hook and line	Unknown	Hook and line	P2	1	0
WCGOP	9/30/2019	WC	Steller Sea Lion	Eastern US	NSI	A Steller sea lion was caught in catch shares bottom trawl gear. The vessel's crew tried letting out the net to allow the animal to swim out, but the animal swam further into the net. The crew then tied off the net and opened the lower end of the net, releasing the animal unharmed. No injuries were reported for this animal.	NSI	Entangled / entrapped	Fishery gear	Catch shares bottom trawl	Commercial	Trawl	P7b	0	0
WCGOP	10/4/2019	WC	Steller Sea Lion	Eastern US	NSI	A Steller sea lion was caught in catch shares bottom trawl gear. The animal was freed from the net and released alive. The observer did not note any sign of injury to the animal.	NSI	Entangled / entrapped	Fishery gear	Catch shares bottom trawl	Commercial	Trawl	P7b	0	0
A-SHOP	10/24/2019	WC	Steller Sea Lion	Eastern US	DEAD	A male Steller sea lion was caught and killed in at-sea hake catcher processor midwater trawl gear.	DEAD	Entangled / entrapped	Fishery gear	At-sea hake catcher-processor midwater trawl	Commercial	Trawl	P4	1	1
WCRO	12/5/2019	WC	Steller Sea Lion	Eastern US	DEAD	An adult male Steller sea lion was found fresh dead. A necropsy found numerous shot pellets and associated hemorrhage in the head, neck, and shoulder area.	DEAD	Shot	Projectile weapon	N/A	N/A	N/A	N/A	1	0
NPGOP	3/2/2019	BS	Steller Sea Lion	Western US	DEAD	A male Steller sea lion was caught and killed by AK BSAI flatfish trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI flatfish trawl	Commercial	Trawl	N/A	1	1
NPGOP	1/14/2015	WAK	Steller Sea Lion	Western US	DEAD	A Steller sea lion was caught and killed by AK BSAI Pacific cod longline gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI Pacific cod longline	Commercial	Longline	N/A	1	1

Appendix Table 1.1 -- Human-marine mammal interaction records reviewed for injury and mortality, 2015-2019.

NPGOP	2/23/2015	WAK	Steller Sea Lion	Western US	NSI	A live Steller sea lion was caught in trawl gear and brought up in the codend of the net. The observer reported that the animal was immediately released and in good, lively condition. This interaction is considered a non-serious injury due to the lack of apparent injuries, and the animal's reported good condition.	NSI	Entangled / entrapped	Fishery gear	AK BSAI flatfish trawl	Commercial	Trawl	P7b	0	0
NPGOP	3/17/2015	WAK	Steller Sea Lion	Western US	DEAD	A Steller sea lion was entangled and killed in AK BSAI Pacific cod longline gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI Pacific cod longline	Commercial	Longline	N/A	1	1
NPGOP	4/22/2015	WAK	Steller Sea Lion	Western US	DEAD	A female Steller sea lion was caught and killed by AK BSAI flatfish trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI flatfish trawl	Commercial	Trawl	N/A	1	1
AKRO	5/28/2015	SCAK	Steller Sea Lion	Western US	DEAD	This is one of many Steller sea lion carcasses that were examined on the Copper River Delta. A 1/4 inch round full-thickness hole surrounded by a halo of blood tinged hair was found on the right lateral neck, and a metal fragment was recovered under the skin on the opposite side of hole.	DEAD	Shot	Projectile weapon	N/A	N/A	N/A	N/A	1	0
AKRO	5/28/2015	SCAK	Steller Sea Lion	Western US	DEAD	This is one of many Steller sea lion carcasses that were examined on the Copper River Delta. When the carcass was turned over a previously unexposed blood tinged circle of hair was apparent associated with a full-thickness hole. A tract led to an area deeper into the neck that was surrounded by soft tissue injury and hemorrhage.	DEAD	Shot	Projectile weapon	N/A	N/A	N/A	N/A	1	0
AKRO	5/28/2015	SCAK	Steller Sea Lion	Western US	DEAD	This is one of many Steller sea lion carcasses that were examined on the Copper River Delta. When the carcass was turned over, a 1.5 inch round hole was found on the right dorsal neck and another hole through the left eye revealing a fractured orbit.	DEAD	Shot	Projectile weapon	N/A	N/A	N/A	N/A	1	0
AKRO	6/2/2015	SCAK	Steller Sea Lion	Western US	DEAD	This is one of many Steller sea lion carcasses that were examined on the Copper River Delta. The animal was fresh dead and it was suspected that it had died within the last 24 hours. There were seven 1/8 inch full thickness holes within a 4 inch - 6 inch circle on the right lateral neck with tracts leading into the soft tissue where there was tissue damage and hemorrhage.	DEAD	Shot	Projectile weapon	N/A	N/A	N/A	N/A	1	0
AKRO	6/2/2015	SCAK	Steller Sea Lion	Western US	DEAD	This is one of many Steller sea lion carcasses that were examined on the Copper River Delta. Eight small holes were noted on the right upper chest when the carcass was flipped over, consistent with shotgun injury. Tracts from these holes extended into deeper tissues with surrounding hemorrhage and soft tissue injury. There were also large blood clots and blood in the pleural cavity.	DEAD	Shot	Projectile weapon	N/A	N/A	N/A	N/A	1	0
AKRO	6/2/2015	SCAK	Steller Sea Lion	Western US	DEAD	This is one of many Steller sea lion carcasses that were examined on the Copper River Delta. A 2 cm round hole was discovered when the carcass was flipped over. Associated with the hole was a large cavity with disorganized tissue, necrotic tissue, hemorrhage, and sand. The pleural cavity contained large blood clots and blood.	DEAD	Shot	Projectile weapon	N/A	N/A	N/A	N/A	1	0
AKRO	6/2/2015	GOA	Steller Sea Lion	Western US	SI	A Steller sea lion was observed with a circumferential neck entanglement caused by unknown material.	SI	Constricting entanglement	Marine debris (unidentified)	N/A	N/A	N/A	P8a	1	0
NPGOP	6/2/2015	WAK	Steller Sea Lion	Western US	DEAD	A Steller sea lion was caught and killed by AK BSAI flatfish trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI flatfish trawl	Commercial	Trawl	N/A	1	1

Appendix Table 1.1 -- Human-marine mammal interaction records reviewed for injury and mortality, 2015-2019.

AKRO	6/5/2015	SCAK	Steller Sea Lion	Western US	DEAD	This is one of many Steller sea lion carcasses that were examined on the Copper River Delta. There were six small holes consistent with shotgun injury on the animal's right neck.	DEAD	Shot	Projectile weapon	N/A	N/A	N/A	N/A	1	0
NPGOP	6/14/2015	WAK	Steller Sea Lion	Western US	DEAD	A Steller sea lion was caught and killed by AK BSAI flatfish trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI flatfish trawl	Commercial	Trawl	N/A	1	1
NMFS OPR/HQ	6/27/2015	WAK	Steller Sea Lion	Western US	DEAD	A Steller sea lion pup died as a result of marine mammal research activities at Ulak Island, AK.	DEAD	Research related injury	MMPA authorized research	N/A	N/A	N/A	N/A	1	0
AKRO	6/30/2015	GOA	Steller Sea Lion	Western US	SI	A Steller sea lion was observed with a circumferential neck entanglement caused by unknown material.	SI	Constricting entanglement	Marine debris (unidentified)	N/A	N/A	N/A	P8a	1	0
NPGOP	7/2/2015	WAK	Steller Sea Lion	Western US	DEAD	A Steller sea lion was caught and killed by AK BSAI flatfish trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI flatfish trawl	Commercial	Trawl	N/A	1	1
AKRO	7/3/2015	SCAK	Steller Sea Lion	Western US	DEAD	A Steller sea lion was found dead, in an advanced state of decomposition. The animal had a hole in the back of its skull that appeared to be a bullet entry or exit wound and a broken bone around the top of the left eye socket.	DEAD	Shot	Projectile weapon	N/A	N/A	N/A	N/A	1	0
ADFG	7/10/2015	PWS	Steller Sea Lion	Western US	SI	An adult female Steller sea lion was observed with a constricting neck entanglement caused by unknown material / marine debris.	SI	Constricting entanglement	Marine debris (unidentified)	N/A	N/A	N/A	P8a	1	0
NPGOP	7/12/2015	WAK	Steller Sea Lion	Western US	DEAD	A Steller sea lion was caught and killed in AK BSAI Pacific cod longline.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI Pacific cod longline	Commercial	Longline	N/A	1	1
NPGOP	7/13/2015	WAK	Steller Sea Lion	Western US	DEAD	A Steller sea lion was caught and killed in AK BSAI flatfish trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI flatfish trawl	Commercial	Trawl	N/A	1	1
ADFG	7/15/2015	GOA	Steller Sea Lion	Western US	NSI	A Steller sea lion was observed with a circle hook in its lip.	NSI	Hooked	Fishery gear	Unknown hook and line	Unknown	Hook and line	P5b	0	0
ADFG	7/19/2015	BS	Steller Sea Lion	Western US	SI	A Steller sea lion was observed with a constricting neck entanglement caused by unknown material / marine debris.	SI	Constricting entanglement	Marine debris (unidentified)	N/A	N/A	N/A	P8a	1	0
AKRO	7/24/2015	GOA	Steller Sea Lion	Western US	SI	A Steller sea lion was observed with a circumferential neck entanglement that appeared to be caused by a twine like material. The twine was cutting into the animal's flesh.	SI	Constricting entanglement	Marine debris (unidentified)	N/A	N/A	N/A	P8a	1	0
NPGOP	8/3/2015	BS	Steller Sea Lion	Western US	DEAD	A Steller sea lion was caught and killed in an AK BSAI flatfish trawl.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI flatfish trawl	Commercial	Trawl	N/A	1	1
NPGOP	8/14/2015	GOA	Steller Sea Lion	Western US	DEAD	A Steller sea lion was caught and killed in AK GOA rockfish trawl gear during an unsampled haul.	DEAD	Entangled / entrapped	Fishery gear	AK GOA rockfish trawl	Commercial	Trawl	N/A	1	1
NPGOP	9/6/2015	GOA	Steller Sea Lion	Western US	DEAD	A Steller sea lion was caught and killed in AK GOA flatfish trawl gear during an unsampled haul.	DEAD	Entangled / entrapped	Fishery gear	AK GOA flatfish trawl	Commercial	Trawl	N/A	1	1
AKRO	9/8/2015	WAK	Steller Sea Lion	Western US	SI	A subadult male Steller sea lion was observed with a circumferential neck entanglement caused by what appeared to be a blue packing band.	SI	Constricting entanglement	Marine debris (packing band)	N/A	N/A	N/A	P8a	1	0
NPGOP	9/15/2015	WAK	Steller Sea Lion	Western US	DEAD	A Steller sea lion was caught and killed in AK BSAI pollock trawl gear	DEAD	Entangled / entrapped	Fishery gear	AK BSAI pollock trawl	Commercial	Trawl	N/A	1	1
NPGOP	10/4/2015	GOA	Steller Sea Lion	Western US	DEAD	A Steller sea lion was caught and killed by AK GOA pollock trawl gear during an unsampled haul.	DEAD	Entangled / entrapped	Fishery gear	AK GOA pollock trawl	Commercial	Trawl	N/A	1	1
NPGOP	10/4/2015	GOA	Steller Sea Lion	Western US	DEAD	A Steller sea lion was caught and killed in AK GOA Pacific cod longline gear.	DEAD	Hooked	Fishery gear	AK GOA Pacific cod longline	Commercial	Longline	N/A	1	1

Appendix Table 1.1 -- Human-marine mammal interaction records reviewed for injury and mortality, 2015-2019.

NPGOP	10/15/2015	GOA	Steller Sea Lion	Western US	DEAD	Two Steller sea lions were caught and killed in AK GOA pollock trawl gear during an unsampled haul. This record represents sea lion 1 of 2.	DEAD	Entangled / entrapped	Fishery gear	AK GOA pollock trawl	Commercial	Trawl	N/A	1	1
NPGOP	10/15/2015	GOA	Steller Sea Lion	Western US	DEAD	Two Steller sea lions were caught and killed in AK GOA pollock trawl gear during an unsampled haul. This record represents sea lion 2 of 2.	DEAD	Entangled / entrapped	Fishery gear	AK GOA pollock trawl	Commercial	Trawl	N/A	1	1
NPGOP	10/16/2015	GOA	Steller Sea Lion	Western US	DEAD	A Steller sea lion was caught and killed by AK GOA pollock trawl fishery gear during an unsampled haul. This is sea lion 1 of 2.	DEAD	Entangled / entrapped	Fishery gear	AK GOA pollock trawl	Commercial	Trawl	N/A	1	1
NPGOP	10/16/2015	GOA	Steller Sea Lion	Western US	DEAD	A Steller sea lion was caught and killed by AK GOA pollock trawl fishery gear during an unsampled haul. This is sea lion 2 of 2.	DEAD	Entangled / entrapped	Fishery gear	AK GOA pollock trawl	Commercial	Trawl	N/A	1	1
AKRO	10/23/2015	GOA	Steller Sea Lion	Western US	SI	A subadult male Steller sea lion was observed with a circumferential neck entanglement caused by what appeared to be AK halibut longline or AK GOA Pacific cod longline.	SI	Constricting entanglement	Fishery gear	AK GOA Pacific cod longline or AK halibut longline	Commercial	Longline	P8a	1	0
NPGOP	11/20/2015	WAK	Steller Sea Lion	Western US	NSI	A Steller sea lion was observed feeding on discarded halibut. The animal had a hook in its right lip. This is considered a non-serious injury under criterion P5b due to the observer's comments that the animal was feeding and behaving normally.	NSI	Hooked	Fishery gear	Unknown hook and line	Unknown	Hook and line	P5b	0	0
NPGOP	1/31/2016	BS	Steller Sea Lion	Western US	DEAD	A Steller sea lion was caught and killed in trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI flatfish trawl	Commercial	Trawl	N/A	1	1
NPGOP	2/4/2016	BS	Steller Sea Lion	Western US	DEAD	A Steller sea lion was caught and killed in trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI flatfish trawl	Commercial	Trawl	N/A	1	1
NPGOP	2/5/2016	BS	Steller Sea Lion	Western US	DEAD	A Steller sea lion was caught and killed in trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI pollock trawl	Commercial	Trawl	N/A	1	1
NPGOP	2/8/2016	BS	Steller Sea Lion	Western US	DEAD	Two Steller sea lions were caught and killed in trawl gear. This is animal 1 of 2.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI pollock trawl	Commercial	Trawl	N/A	1	1
NPGOP	2/8/2016	BS	Steller Sea Lion	Western US	DEAD	Two Steller sea lions were caught and killed in trawl gear. This is animal 2 of 2.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI pollock trawl	Commercial	Trawl	N/A	1	1
NPGOP	2/8/2016	BS	Steller Sea Lion	Western US	DEAD	A Steller sea lion was caught and killed in trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI pollock trawl	Commercial	Trawl	N/A	1	1
NPGOP	2/12/2016	BS	Steller Sea Lion	Western US	DEAD	A Steller sea lion was caught and killed in trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI pollock trawl	Commercial	Trawl	N/A	1	1
NPGOP	2/17/2016	BS	Steller Sea Lion	Western US	DEAD	A Steller sea lion was caught and killed in trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI pollock trawl	Commercial	Trawl	N/A	1	1
NPGOP	2/25/2016	BS	Steller Sea Lion	Western US	DEAD	A Steller sea lion was caught and killed in trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI pollock trawl	Commercial	Trawl	N/A	1	1
NPGOP	2/29/2016	WAK	Steller Sea Lion	Western US	DEAD	A Steller sea lion was caught and killed by trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI flatfish trawl	Commercial	Trawl	N/A	1	1
NPGOP	2/29/2016	BS	Steller Sea Lion	Western US	DEAD	A Steller sea lion was caught and killed in trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI pollock trawl	Commercial	Trawl	N/A	1	1
NPGOP	3/3/2016	BS	Steller Sea Lion	Western US	DEAD	A Steller sea lion was caught and killed in trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI pollock trawl	Commercial	Trawl	N/A	1	1
NPGOP	3/10/2016	BS	Steller Sea Lion	Western US	DEAD	A Steller sea lion was caught and killed in trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI flatfish trawl	Commercial	Trawl	N/A	1	1
AKRO	3/11/2016	GOA	Steller Sea Lion	Western US	SI	A Steller sea lion was observed with a circumferential neck entanglement caused by rope or line.	SI	Constricting entanglement	Marine debris (rope)	N/A	N/A	N/A	P8a	1	0
NPGOP	3/22/2016	BS	Steller Sea Lion	Western US	DEAD	A Steller sea lion was caught and killed in trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI pollock trawl	Commercial	Trawl	N/A	1	1

Appendix Table 1.1 -- Human-marine mammal interaction records reviewed for injury and mortality, 2015-2019.

NPGOP	3/30/2016	BS	Steller Sea Lion	Western US	DEAD	A Steller sea lion was caught and killed in trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI pollock trawl	Commercial	Trawl	N/A	1	1
NPGOP	4/13/2016	BS	Steller Sea Lion	Western US	DEAD	A Steller sea lion was caught and killed in trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI flatfish trawl	Commercial	Trawl	N/A	1	1
NPGOP	4/27/2016	BS	Steller Sea Lion	Western US	DEAD	A Steller sea lion was caught and killed in trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI flatfish trawl	Commercial	Trawl	N/A	1	1
NPGOP	5/11/2016	BS	Steller Sea Lion	Western US	DEAD	A Steller sea lion was caught and killed in trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI flatfish trawl	Commercial	Trawl	N/A	1	1
NPGOP	5/11/2016	BS	Steller Sea Lion	Western US	DEAD	A Steller sea lion was caught and killed in trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI flatfish trawl	Commercial	Trawl	N/A	1	1
NPGOP	5/20/2016	BS	Steller Sea Lion	Western US	DEAD	A Steller sea lion was caught and killed by trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI flatfish trawl	Commercial	Trawl	N/A	1	1
AKRO	6/21/2016	SCAK	Steller Sea Lion	Western US	DEAD	A Steller sea lion carcass was discovered during Copper River Delta carcass surveys. A tracking wound and damage to the skull was noted by examiners, and metal fragments were identified in the animal's head with x-ray indicating that the animal had been shot.	DEAD	Shot	Projectile weapon	N/A	N/A	N/A	N/A	1	0
NMFS OPR/HQ	7/3/2016	SEAK	Steller Sea Lion	Western US	DEAD	Two Steller sea lions were incidentally killed during MMPA authorized research. This record represents sea lion 1 of 2.	DEAD	Research related injury	MMPA authorized research	N/A	N/A	N/A	N/A	1	0
NMFS OPR/HQ	7/3/2016	SEAK	Steller Sea Lion	Western US	DEAD	Two Steller sea lions were incidentally killed during MMPA authorized research. This record represents sea lion 2 of 2.	DEAD	Research related injury	MMPA authorized research	N/A	N/A	N/A	N/A	1	0
NPGOP	7/31/2016	BS	Steller Sea Lion	Western US	DEAD	A Steller sea lion was caught and killed in trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI pollock trawl	Commercial	Trawl	N/A	1	1
NPGOP	9/16/2016	GOA	Steller Sea Lion	Western US	DEAD	A Steller sea lion was caught and killed in trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK GOA pollock trawl	Commercial	Trawl	N/A	1	1
NPGOP	9/21/2016	BS	Steller Sea Lion	Western US	DEAD	A Steller sea lion was caught and killed in trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI pollock trawl	Commercial	Trawl	N/A	1	1
NPGOP	11/1/2016	GOA	Steller Sea Lion	Western US	DEAD	A Steller sea lion was caught and killed in trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK GOA Pacific cod trawl	Commercial	Trawl	N/A	1	1
NPGOP	1/29/2017	BS	Steller Sea Lion	Western US	DEAD	A Steller sea lion was caught and killed by trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI pollock trawl	Commercial	Trawl	N/A	1	1
NPGOP	2/11/2017	BS	Steller Sea Lion	Western US	DEAD	A Steller sea lion was caught and killed by trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI pollock trawl	Commercial	Trawl	N/A	1	1
NPGOP	2/26/2017	BS	Steller Sea Lion	Western US	DEAD	Two Steller sea lions were caught and killed by trawl gear. This record represents 1 of 2 - Male.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI pollock trawl	Commercial	Trawl	N/A	1	1
NPGOP	2/26/2017	BS	Steller Sea Lion	Western US	DEAD	Two Steller sea lions were caught and killed by trawl gear. This record represents 2 of 2 - Male.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI pollock trawl	Commercial	Trawl	N/A	1	1
NPGOP	2/28/2017	BS	Steller Sea Lion	Western US	DEAD	A female Steller sea lion was caught and killed by trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI Pacific cod trawl	Commercial	Trawl	N/A	1	1
NPGOP	3/24/2017	BS	Steller Sea Lion	Western US	DEAD	A male Steller sea lion was caught and killed by trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI pollock trawl	Commercial	Trawl	N/A	1	1
NPGOP	3/30/2017	WAK	Steller Sea Lion	Western US	DEAD	An adult male Steller sea lion was caught and killed by trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI Atka mackerel trawl	Commercial	Trawl	N/A	1	1
NPGOP	4/22/2017	Alaska	Steller Sea Lion	Western US	DEAD	A female Steller sea lion was caught and killed by BSAI pollock trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI pollock trawl	Commercial	Trawl	N/A	1	1
NPGOP	4/23/2017	BS	Steller Sea Lion	Western US	DEAD	A male Steller sea lion was caught and killed by trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI flatfish trawl	Commercial	Trawl	N/A	1	1
NPGOP	5/15/2017	BS	Steller Sea Lion	Western US	DEAD	A Steller sea lion was caught and killed by trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI flatfish trawl	Commercial	Trawl	N/A	1	1

Appendix Table 1.1 -- Human-marine mammal interaction records reviewed for injury and mortality, 2015-2019.

NPGOP	5/15/2017	BS	Steller Sea Lion	Western US	DEAD	A male Steller sea lion was caught and killed by trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI flatfish trawl	Commercial	Trawl	N/A	1	1
NPGOP	5/18/2017	BS	Steller Sea Lion	Western US	DEAD	A male Steller sea lion was caught and killed by trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI flatfish trawl	Commercial	Trawl	N/A	1	1
NPGOP	5/21/2017	BS	Steller Sea Lion	Western US	DEAD	A male Steller sea lion was caught and killed by trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI flatfish trawl	Commercial	Trawl	N/A	1	1
NPGOP	5/27/2017	BS	Steller Sea Lion	Western US	DEAD	A male Steller sea lion was caught and killed by trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI flatfish trawl	Commercial	Trawl	N/A	1	1
NPGOP	6/3/2017	BS	Steller Sea Lion	Western US	DEAD	A male Steller sea lion was caught and killed by trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI flatfish trawl	Commercial	Trawl	N/A	1	1
NPGOP	6/14/2017	BS	Steller Sea Lion	Western US	DEAD	A Steller sea lion was caught and killed in AK BSAI Pacific cod longline gear.	DEAD	Hooked	Fishery gear	AK BSAI Pacific cod longline	Commercial	Longline	N/A	1	1
ADFG	7/10/2017	PWS	Steller Sea Lion	Western US	SI	A male Steller sea lion was observed with a circumferential neck entanglement caused by unidentified material.	SI	Constricting entanglement	Marine debris (unidentified)	N/A	N/A	N/A	P8a	1	0
ADFG	7/12/2017	SCAK	Steller Sea Lion	Western US	SI	An adult female Steller sea lion was observed with a circumferential neck entanglement caused by unidentified material.	SI	Constricting entanglement	Marine debris (unidentified)	N/A	N/A	N/A	P8a	1	0
NPGOP	7/13/2017	BS	Steller Sea Lion	Western US	DEAD	A male Steller sea lion was caught and killed by trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI flatfish trawl	Commercial	Trawl	N/A	1	1
ADFG	7/17/2017	Kodiak	Steller Sea Lion	Western US	SI	A male Steller sea lion was observed with a flasher at the edge of its mouth with 4 ft of trailing line.	SI	Hooked	Fishery gear	Salmon hook and line	Unknown	Hook and line	P2	1	0
ADFG	7/17/2017	Kodiak	Steller Sea Lion	Western US	SI	An adult female Steller sea lion was observed with a circumferential neck entanglement caused by unidentified material.	SI	Constricting entanglement	Marine debris (unidentified)	N/A	N/A	N/A	P8a	1	0
NPGOP	9/10/2017	BS	Steller Sea Lion	Western US	DEAD	A Steller sea lion was caught and killed by trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI pollock trawl	Commercial	Trawl	N/A	1	1
NPGOP	9/23/2017	BS	Steller Sea Lion	Western US	DEAD	A male Steller sea lion was caught and killed by trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI flatfish trawl	Commercial	Trawl	N/A	1	1
NPGOP	9/29/2017	BS	Steller Sea Lion	Western US	DEAD	A Steller sea lion was caught and killed by trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI flatfish trawl	Commercial	Trawl	N/A	1	1
NPGOP	9/30/2017	BS	Steller Sea Lion	Western US	DEAD	A male Steller sea lion was caught and killed by trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI flatfish trawl	Commercial	Trawl	N/A	1	1
NPGOP	11/10/2017	BS	Steller Sea Lion	Western US	DEAD	A male Steller sea lion was caught and killed by trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI flatfish trawl	Commercial	Trawl	N/A	1	1
NPGOP	11/13/2017	BS	Steller Sea Lion	Western US	DEAD	A male Steller sea lion was caught and killed by trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI flatfish trawl	Commercial	Trawl	N/A	1	1
NPGOP	1/28/2018	BS	Steller Sea Lion	Western US	DEAD	Four male Steller sea lions were caught and killed by BSAI Atka mackerel trawl gear. This record represents 1 of 4.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI Atka mackerel trawl	Commercial	Trawl	N/A	1	1
NPGOP	1/28/2018	BS	Steller Sea Lion	Western US	DEAD	Four male Steller sea lions were caught and killed by BSAI Atka mackerel trawl gear. This record represents 2 of 4.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI Atka mackerel trawl	Commercial	Trawl	N/A	1	1
NPGOP	1/28/2018	BS	Steller Sea Lion	Western US	DEAD	Four male Steller sea lions were caught and killed by BSAI Atka mackerel trawl gear. This record represents 3 of 4.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI Atka mackerel trawl	Commercial	Trawl	N/A	1	1
NPGOP	1/28/2018	BS	Steller Sea Lion	Western US	DEAD	Four male Steller sea lions were caught and killed by BSAI Atka mackerel trawl gear. This record represents 4 of 4.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI Atka mackerel trawl	Commercial	Trawl	N/A	1	1
NPGOP	2/8/2018	BS	Steller Sea Lion	Western US	DEAD	A female Steller sea lion was caught and killed by BSAI pollock trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI pollock trawl	Commercial	Trawl	N/A	1	1

Appendix Table 1.1 -- Human-marine mammal interaction records reviewed for injury and mortality, 2015-2019.

NPGOP	2/16/2018	BS	Steller Sea Lion	Western US	DEAD	A male Steller sea lion was caught and killed by BSAI flatfish trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI flatfish trawl	Commercial	Trawl	N/A	1	1
NPGOP	2/19/2018	BS	Steller Sea Lion	Western US	DEAD	A female Steller sea lion was caught and killed by BSAI pollock trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI pollock trawl	Commercial	Trawl	N/A	1	1
NPGOP	2/19/2018	BS	Steller Sea Lion	Western US	DEAD	A male Steller sea lion was caught and killed by BSAI pollock trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI pollock trawl	Commercial	Trawl	N/A	1	1
NPGOP	2/24/2018	BS	Steller Sea Lion	Western US	DEAD	A male Steller sea lion was caught and killed by BSAI Atka mackerel trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI Atka mackerel trawl	Commercial	Trawl	N/A	1	1
NPGOP	2/25/2018	BS	Steller Sea Lion	Western US	DEAD	A male Steller sea lion was caught and killed by BSAI flatfish trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI flatfish trawl	Commercial	Trawl	N/A	1	1
NPGOP	3/1/2018	BS	Steller Sea Lion	Western US	DEAD	A male Steller sea lion was caught and killed by BSAI pollock trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI pollock trawl	Commercial	Trawl	N/A	1	1
NPGOP	3/11/2018	BS	Steller Sea Lion	Western US	DEAD	A male Steller sea lion was caught and killed by BSAI flatfish trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI flatfish trawl	Commercial	Trawl	N/A	1	1
NPGOP	3/12/2018	BS	Steller Sea Lion	Western US	DEAD	A male Steller sea lion was caught and killed by BSAI pollock trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI pollock trawl	Commercial	Trawl	N/A	1	1
NPGOP	3/23/2018	BS	Steller Sea Lion	Western US	DEAD	A male Steller sea lion was caught and killed by BSAI pollock trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI pollock trawl	Commercial	Trawl	N/A	1	1
NPGOP	3/28/2018	BS	Steller Sea Lion	Western US	DEAD	A male Steller sea lion was caught and killed by BSAI Pacific cod trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI Pacific cod trawl	Commercial	Trawl	N/A	1	1
NPGOP	5/16/2018	BS	Steller Sea Lion	Western US	DEAD	A male Steller sea lion was caught and killed by BSAI flatfish trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI flatfish trawl	Commercial	Trawl	N/A	1	1
NPGOP	5/25/2018	BS	Steller Sea Lion	Western US	DEAD	A male Steller sea lion was caught and killed by BSAI flatfish trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI flatfish trawl	Commercial	Trawl	N/A	1	1
NPGOP	6/6/2018	BS	Steller Sea Lion	Western US	DEAD	A male Steller sea lion was caught and killed by BSAI flatfish trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI flatfish trawl	Commercial	Trawl	N/A	1	1
NPGOP	6/8/2018	BS	Steller Sea Lion	Western US	DEAD	A male Steller sea lion was caught and killed by BSAI flatfish trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI flatfish trawl	Commercial	Trawl	N/A	1	1
NPGOP	6/8/2018	BS	Steller Sea Lion	Western US	DEAD	A female Steller sea lion was caught and killed by BSAI flatfish trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI flatfish trawl	Commercial	Trawl	N/A	1	1
ADFG	7/10/2018	PWS	Steller Sea Lion	Western US	SI	A subadult male Steller sea lion was observed with a circumferential neck entanglement caused by an unknown material / marine debris.	SI	Constricting entanglement	Marine debris (unidentified)	N/A	N/A	N/A	P8a	1	0
ADFG	7/14/2018	Kodiak	Steller Sea Lion	Western US	SI	An adult male Steller sea lion was observed with a circumferential neck entanglement caused by an unknown material / marine debris.	SI	Constricting entanglement	Marine debris (unidentified)	N/A	N/A	N/A	P8a	1	0
ADFG	7/22/2018	Kodiak	Steller Sea Lion	Western US	SI	An adult female Steller sea lion was observed with a circumferential neck entanglement caused by an unknown material / marine debris.	SI	Constricting entanglement	Marine debris (unidentified)	N/A	N/A	N/A	P8a	1	0
AKRO	8/10/2018	Kodiak	Steller Sea Lion	Western US	SI	A Steller sea lion was observed with a silver flasher at the edge of its mouth.	SI	Hooked	Fishery gear	Salmon hook and line	Unknown	Hook and line	P2	1	0
AKRO	9/24/2018	Kodiak	Steller Sea Lion	Western US	DEAD	An adult female Steller sea lion was found dead in a seine net. The animal had net marks on its body and was in an advanced state of decomposition.	DEAD	Entangled / entrapped	Fishery gear	AK Kodiak salmon fisheries, Kitoi Bay salmon hatchery	Commercial	Seine	N/A	1	1
MMAP	11/24/2018	Kodiak	Steller Sea Lion	Western US	DEAD	Two previously dead Steller sea lions were found in a trawl net. Both were entangled in rope from an unknown source. This record represents animal 1 of 2.	DEAD	Entangled / entrapped	Marine debris	N/A	N/A	N/A	N/A	1	0

Appendix Table 1.1 -- Human-marine mammal interaction records reviewed for injury and mortality, 2015-2019.

MMAP	11/24/2018	Kodiak	Steller Sea Lion	Western US	DEAD	Two previously dead Steller sea lions were found in a trawl net. Both were entangled in rope from an unknown source. This record represents animal 2 of 2.	DEAD	Entangled / entrapped	Marine debris	N/A	N/A	N/A	N/A	1	0
NPGOP	11/27/2018	BS	Steller Sea Lion	Western US	NSI	A Steller sea lion was caught in BSAI flatfish trawl gear and brought on deck. The animal was released from the gear at which time it began to move and snarl. The animal was then released overboard. There are no reports of injury to the animal.	NSI	Entangled / entrapped	Fishery gear	AK BSAI flatfish trawl	Commercial	Trawl	P4	0	0
NPGOP	2/15/2019	BS	Steller Sea Lion	Western US	DEAD	A male Steller sea lion was caught and killed by AK BSAI flatfish trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI flatfish trawl	Commercial	Trawl	N/A	1	1
NPGOP	2/25/2019	BS	Steller Sea Lion	Western US	DEAD	A male Steller sea lion was caught and killed by AK BSAI flatfish trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI flatfish trawl	Commercial	Trawl	N/A	1	1
NPGOP	2/26/2019	BS	Steller Sea Lion	Western US	DEAD	A male Steller sea lion was caught and killed by AK BSAI flatfish trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI flatfish trawl	Commercial	Trawl	N/A	1	1
NPGOP	3/10/2019	BS	Steller Sea Lion	Western US	DEAD	A male Steller sea lion was caught and killed by AK BSAI flatfish trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI flatfish trawl	Commercial	Trawl	N/A	1	1
NPGOP	3/15/2019	BS	Steller Sea Lion	Western US	DEAD	A male Steller sea lion was caught and killed by AK BSAI flatfish trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI flatfish trawl	Commercial	Trawl	N/A	1	1
NPGOP	4/6/2019	BS	Steller Sea Lion	Western US	DEAD	A male Steller sea lion was caught and killed by AK BSAI flatfish trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI flatfish trawl	Commercial	Trawl	N/A	1	1
NPGOP	4/13/2019	BS	Steller Sea Lion	Western US	DEAD	A male Steller sea lion was caught and killed by AK BSAI flatfish trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI flatfish trawl	Commercial	Trawl	N/A	1	1
NPGOP	5/3/2019	BS	Steller Sea Lion	Western US	DEAD	A male Steller sea lion was caught and killed by AK BSAI flatfish trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI flatfish trawl	Commercial	Trawl	N/A	1	1
AKRO	6/21/2019	SCAK	Steller Sea Lion	Western US	DEAD	An adult male Steller sea lion carcass was discovered fresh dead during the Copper River Delta carcass survey. A metal detector signaled at the head and across the back; the head was collected and radiographs confirmed bullet fragments and multiple fractures in the skull.	DEAD	Shot	Projectile weapon	N/A	N/A	N/A	N/A	1	0
AKRO	6/21/2019	SCAK	Steller Sea Lion	Western US	DEAD	An adult male Steller sea lion carcass was discovered during the Copper River Delta carcass survey in a state of moderate decomposition. A metal detector signaled at the head and across the back; the head was collected and radiographs confirmed a bullet in the skull.	DEAD	Shot	Projectile weapon	N/A	N/A	N/A	N/A	1	0
AKRO	6/21/2019	SCAK	Steller Sea Lion	Western US	DEAD	A subadult female Steller sea lion carcass was discovered during the Copper River Delta carcass survey in a state of moderate decomposition. A metal detector signaled at the skull and near the pelvis; the head was collected and radiographs confirmed a bullet in the skull.	DEAD	Shot	Projectile weapon	N/A	N/A	N/A	N/A	1	0
NPGOP	7/5/2019	BS	Steller Sea Lion	Western US	DEAD	A male Steller sea lion was caught and killed by AK BSAI pollock trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI pollock trawl	Commercial	Trawl	N/A	1	1
ADFG	7/16/2019	SCAK	Steller Sea Lion	Western US	SI	An adult female Steller sea lion was observed with a circumferential neck entanglement caused by an unknown material / marine debris.	SI	Constricting entanglement	Marine debris (unidentified)	N/A	N/A	N/A	P8a	1	0
ADFG	7/19/2019	Kodiak	Steller Sea Lion	Western US	SI	A juvenile Steller sea lion was observed with a circumferential neck entanglement caused by an unknown material / marine debris.	SI	Constricting entanglement	Marine debris (unidentified)	N/A	N/A	N/A	P8a	1	0
AKRO	8/12/2019	SCAK	Steller Sea Lion	Western US	SI	A Steller sea lion was observed hauled out with a spoon or flasher at the edge of its mouth.	SI	Hooked	Fishery gear	Salmon hook and line	Unknown	Hook and line	P2	1	0

Appendix Table 1.1 -- Human-marine mammal interaction records reviewed for injury and mortality, 2015-2019.

NPGOP	8/16/2019	GOA	Steller Sea Lion	Western US	DEAD	A Steller sea lion was caught and killed by AK GOA sablefish longline gear.	DEAD	Entangled / entrapped	Fishery gear	AK GOA sablefish longline	Commercial	Longline	N/A	1	1
NPGOP	8/27/2019	BS	Steller Sea Lion	Western US	DEAD	A male Steller sea lion was caught and killed by AK BSAI pollock trawl gear. Observer said animal was previously dead but examination of photos indicates fresh dead/killed by gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI pollock trawl	Commercial	Trawl	N/A	1	1
NPGOP	9/21/2019	BS	Steller Sea Lion	Western US	DEAD	Two male Steller sea lions were caught and killed by AK BSAI pollock trawl gear. This record represents 2 of 2.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI pollock trawl	Commercial	Trawl	N/A	1	1
NPGOP	9/21/2019	BS	Steller Sea Lion	Western US	DEAD	Two male Steller sea lions were caught and killed by AK BSAI pollock trawl gear. This record represents 1 of 2.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI pollock trawl	Commercial	Trawl	N/A	1	1
NPGOP	9/30/2019	BS	Steller Sea Lion	Western US	DEAD	A male Steller sea lion was caught and killed by AK BSAI flatfish trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI flatfish trawl	Commercial	Trawl	N/A	1	1
NPGOP	10/1/2019	GOA	Steller Sea Lion	Western US	DEAD	A Steller sea lion was caught and killed by AK GOA sablefish longline gear.	DEAD	Hooked	Fishery gear	AK GOA sablefish longline	Commercial	Longline	N/A	1	1
NPGOP	11/5/2019	BS	Steller Sea Lion	Western US	DEAD	A male Steller sea lion was caught and killed by AK BSAI flatfish trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI flatfish trawl	Commercial	Trawl	N/A	1	1
NPGOP	11/26/2019	BS	Steller Sea Lion	Western US	DEAD	A male Steller sea lion was caught and killed by AK BSAI flatfish trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI flatfish trawl	Commercial	Trawl	N/A	1	1
NPGOP	11/27/2019	BS	Steller Sea Lion	Western US	DEAD	A female Steller sea lion was caught and killed by AK BSAI flatfish trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI flatfish trawl	Commercial	Trawl	N/A	1	1
NPGOP	11/30/2019	BS	Steller Sea Lion	Western US	DEAD	A male Steller sea lion was caught and killed by AK BSAI flatfish trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI flatfish trawl	Commercial	Trawl	N/A	1	1
NPGOP	12/5/2019	GOA	Steller Sea Lion	Western US	DEAD	Two male Steller sea lions were caught and killed by AK GOA flatfish trawl gear during an unsampled haul. This record represents 2 of 2.	DEAD	Entangled / entrapped	Fishery gear	AK GOA flatfish trawl	Commercial	Trawl	N/A	1	1
NPGOP	12/5/2019	GOA	Steller Sea Lion	Western US	DEAD	Two male Steller sea lions were caught and killed by AK GOA flatfish trawl gear during an unsampled haul. This record represents 1 of 2.	DEAD	Entangled / entrapped	Fishery gear	AK GOA flatfish trawl	Commercial	Trawl	N/A	1	1
AKRO	12/1/2018	SEAK	Unidentified Large Whale	Unknown	PRORATE	An unidentified large cetacean was observed to be entangled. The nature of the entanglement is unknown; however, the whale was seen dragging 15 feet of line and a small buoy. The whale did not appear to be struggling. No additional information was reported for this case.	PRORATE	Entangled / entrapped	Marine debris (unidentified)	N/A	N/A	N/A	L10	0.75	0
AKRO	9/5/2019	BS	Unidentified Large Whale	Unknown	DEAD	A floating unidentified large whale carcass in an advanced state of decomposition was observed with line tightly wrapped around its tail stock. Local experts suspected that this animal died from entanglement in BSAI Pacific cod pot gear, but that this was not able to be confirmed, therefore the mortality is not being assigned to this fishery.	DEAD	Entangled / entrapped	Fishery gear	Unknown	Unknown	Unknown	N/A	1	0
WCGOP	1/3/2018	WC	Unidentified Otariid	Eastern US	NSI	An unidentified otariid was caught in catch shares EM bottom trawl gear and brought on deck. The animal was released from the gear and exited the vessel on its own. No injuries were reported for this animal.	NSI	Entangled / entrapped	Fishery gear	Catch shares EM bottom trawl	Commercial	Trawl	P4	0	0
A-SHOP	5/9/2018	WC	Unidentified Otariid	Eastern US	DEAD	An unidentified otariid was caught and killed in midwater rockfish EM trawl gear.	DEAD	Entangled / entrapped	Fishery gear	Midwater rockfish EM trawl	Commercial	Trawl	N/A	1	1

Appendix Table 1.1 -- Human-marine mammal interaction records reviewed for injury and mortality, 2015-2019.

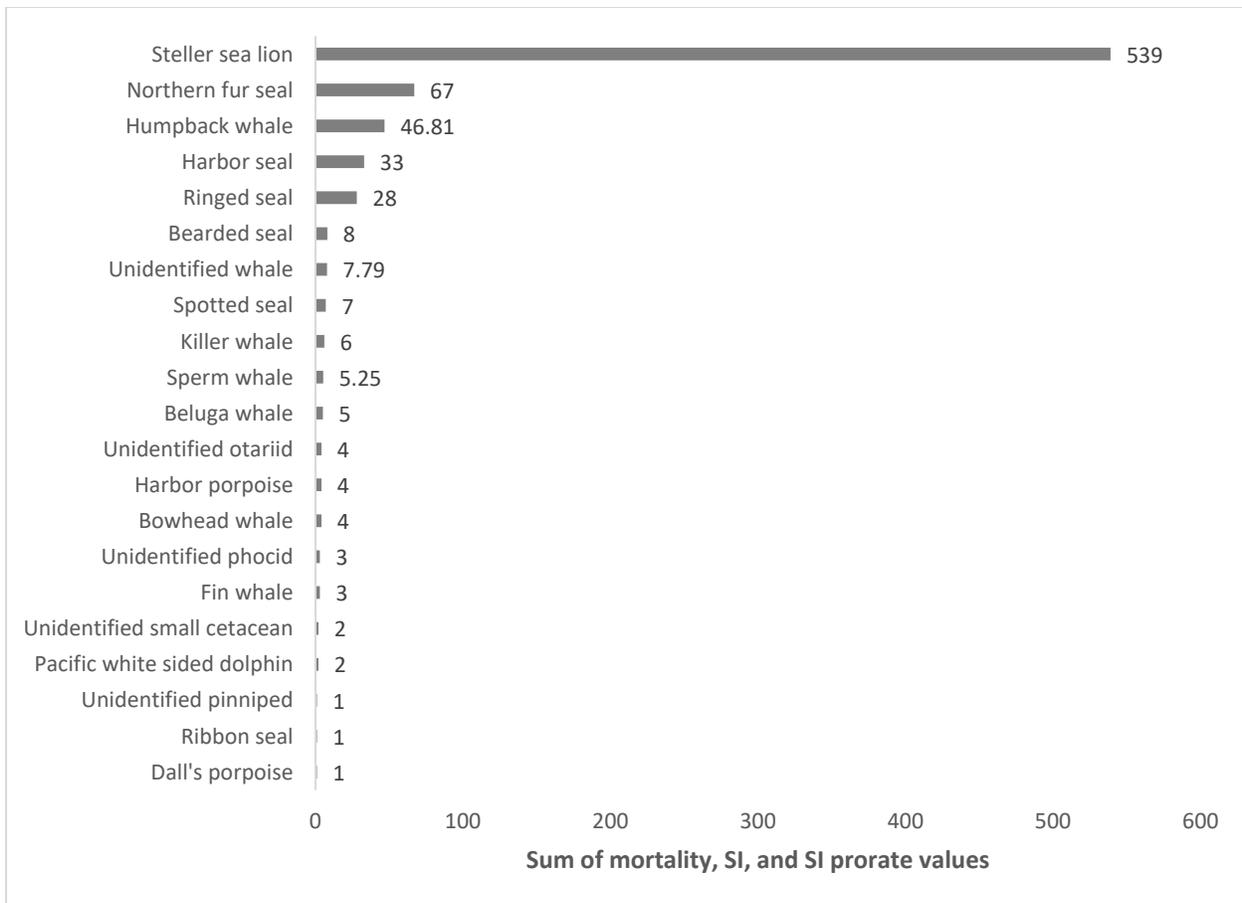
A-SHOP	10/6/2017	WC	Unidentified Otariid	Unknown	NSI	Four unidentified otariids were caught in at-sea hake catcher processor midwater trawl gear and hauled up to the stern ramp. The animals were slowly rolled towards the front of the net, and were eventually released from the net at the end of the stern ramp. Hoses were then utilized to coax the animals into the water. No injuries were reported. This record is 1 of 4.	NSI	Entangled / entrapped	Fishery gear	At-sea hake catcher-processor midwater trawl	Commercial	Trawl	P7b	0	0
A-SHOP	10/6/2017	WC	Unidentified Otariid	Unknown	NSI	Four unidentified otariids were caught in at-sea hake catcher processor midwater trawl gear and hauled up to the stern ramp. The animals were slowly rolled towards the front of the net, and were eventually released from the net at the end of the stern ramp. Hoses were then utilized to coax the animals into the water. No injuries were reported. This record is 2 of 4.	NSI	Entangled / entrapped	Fishery gear	At-sea hake catcher-processor midwater trawl	Commercial	Trawl	P7b	0	0
A-SHOP	10/6/2017	WC	Unidentified Otariid	Unknown	NSI	Four unidentified otariids were caught in at-sea hake catcher processor midwater trawl gear and hauled up to the stern ramp. The animals were slowly rolled towards the front of the net, and were eventually released from the net at the end of the stern ramp. Hoses were then utilized to coax the animals into the water. No injuries were reported. This record is 3 of 4.	NSI	Entangled / entrapped	Fishery gear	At-sea hake catcher-processor midwater trawl	Commercial	Trawl	P7b	0	0
A-SHOP	10/6/2017	WC	Unidentified Otariid	Unknown	NSI	Four unidentified otariids were caught in at-sea hake catcher processor midwater trawl gear and hauled up to the stern ramp. The animals were slowly rolled towards the front of the net, and were eventually released from the net at the end of the stern ramp. Hoses were then utilized to coax the animals into the water. No injuries were reported. This record is 4 of 4.	NSI	Entangled / entrapped	Fishery gear	At-sea hake catcher-processor midwater trawl	Commercial	Trawl	P7b	0	0
A-SHOP	10/8/2017	WC	Unidentified Otariid	Unknown	NSI	An unidentified otariid was caught in at-sea hake catcher processor midwater trawl gear and hauled onto the deck of the vessel. The ship's deck hands sprayed water onto the animal and pulled at the net until the animal moved out of the net through a hole that was made by the deck hands. The net was then sent back into the water with the animal still on it. Once the net hit the water the animal jumped off the side and into the water. The animal initially seemed lethargic, but perked up once it passed the top of the stern ramp during release to the water. No injuries were reported.	NSI	Entangled / entrapped	Fishery gear	At-sea hake catcher-processor midwater trawl	Commercial	Trawl	P4	0	0
WCGOP	3/6/2019	WC	Unidentified Otariid	Unknown	DEAD	An unidentified otariid was caught and killed in catch shares EM bottom trawl gear.	DEAD	Entangled / entrapped	Fishery gear	Catch shares EM bottom trawl	Commercial	Trawl	N/A	1	1
NPGOP	5/3/2019	BS	Unidentified Otariid	Unknown	DEAD	An unidentified otariid was caught and killed by AK BSAI flatfish trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI flatfish trawl	Commercial	Trawl	N/A	1	1
WCGOP	7/25/2019	WC	Unidentified Otariid	Unknown	DEAD	An unidentified otariid was caught and killed in catch shares EM bottom trawl gear.	DEAD	Entangled / entrapped	Fishery gear	Catch shares EM bottom trawl	Commercial	Trawl	N/A	1	1
NPGOP	3/11/2016	BS	Unidentified Phocid	Unknown	DEAD	An unidentified phocid was caught and killed in trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI Pacific cod trawl	Commercial	Trawl	N/A	1	1
NPGOP	6/14/2017	BS	Unidentified Phocid	Unknown	DEAD	An unidentified phocid was caught and killed by trawl gear.	DEAD	Entangled / entrapped	Fishery gear	AK BSAI pollock trawl	Commercial	Trawl	N/A	1	1
NPGOP	3/20/2019	GOA	Unidentified Phocid	Unknown	DEAD	An unidentified phocid was caught and killed by AK GOA halibut longline gear.	DEAD	Hooked	Fishery gear	AK GOA halibut longline	Commercial	Longline	N/A	1	1

Appendix Table 1.1 -- Human-marine mammal interaction records reviewed for injury and mortality, 2015-2019.

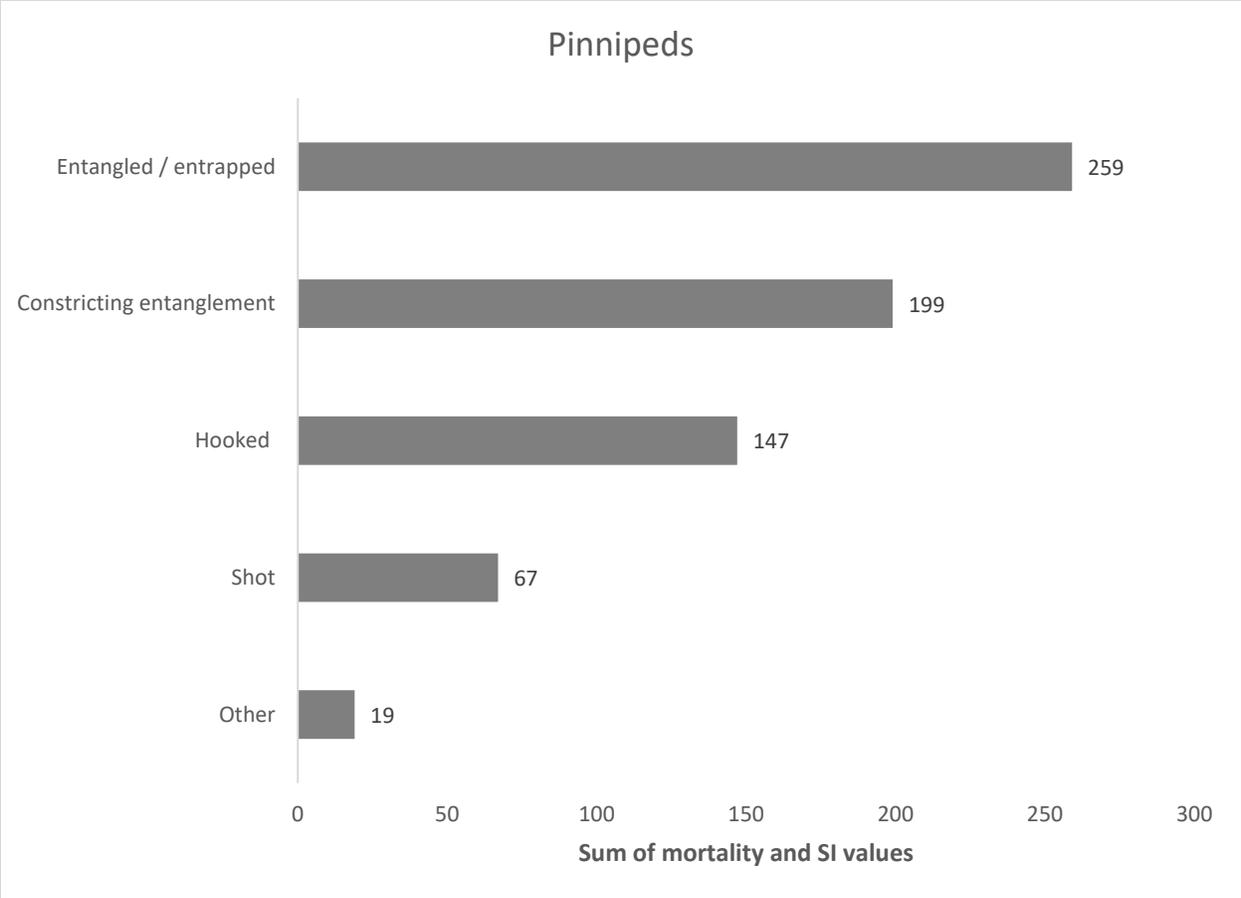
NPGOP	8/12/2016	BS	Unidentified Pinniped	Unknown	DEAD	An unidentified pinniped was hooked on and killed by longline gear.	DEAD	Hooked	Fishery gear	AK BSAI Pacific cod longline	Commercial	Longline	N/A	1	1
A-SHOP	11/8/2016	WC	Unidentified Pinniped	Unknown	NSI	An unidentified pinniped was reported by a member of the crew to have been entangled in trawl gear before being released. The observer did not witness the interaction.	NSI	Entangled / entrapped	Fishery gear	At-sea hake catcher-processor midwater trawl	Commercial	Trawl	P7b	0	0
A-SHOP	11/8/2016	WC	Unidentified Pinniped	Unknown	NSI	An unidentified pinniped was found in the live tank. A plank was lowered into the live tank, and the animal was motivated up the plank with a hose. It exited the live tank and promptly entered the water.	NSI	Entangled / entrapped	Fishery gear	At-sea hake catcher-processor midwater trawl	Commercial	Trawl	P7b	0	0
A-SHOP	11/12/2016	WC	Unidentified Pinniped	Unknown	NSI	An unidentified pinniped was caught in trawl gear and brought aboard, released from the net, and then returned to the water.	NSI	Entangled / entrapped	Fishery gear	At-sea hake catcher-processor midwater trawl	Commercial	Trawl	P4	0	0
A-SHOP	11/12/2016	WC	Unidentified Pinniped	Unknown	NSI	A member of the crew informed the observer that an unidentified pinniped had been found in the live tank and then released alive. The observer did not witness the interaction.	NSI	Entangled / entrapped	Fishery gear	At-sea hake catcher-processor midwater trawl	Commercial	Trawl	P4	0	0
A-SHOP	11/12/2016	WC	Unidentified Pinniped	Unknown	NSI	A member of the crew informed the observer that an unidentified pinniped had been found in the live tank and then released alive. The observer did not witness the interaction.	NSI	Entangled / entrapped	Fishery gear	At-sea hake catcher-processor midwater trawl	Commercial	Trawl	P4	0	0
A-SHOP	11/13/2016	WC	Unidentified Pinniped	Unknown	NSI	An unidentified pinniped was caught in trawl gear, brought aboard, released from the net, and was motivated by the crew to return to the water.	NSI	Entangled / entrapped	Fishery gear	At-sea hake catcher-processor midwater trawl	Commercial	Trawl	P4	0	0
A-SHOP	10/19/2019	WC	Unidentified Pinniped	Unknown	NSI	An unidentified pinniped was caught in at-sea hake catcher processor midwater trawl gear, brought aboard the vessel, and released from the net. After the release the animal went into the ship's gear locker. The vessel's crew corralled the animal by yelling at the animal while holding boards in front of themselves until the animal jumped off the stern of the vessel. No injuries were reported for this animal.	NSI	Entangled / entrapped	Fishery gear	At-sea hake catcher-processor midwater trawl	Commercial	Trawl	P4	0	0
MMAF	8/9/2017	SCAK	Unidentified Small Cetacean	Unknown	DEAD	Two unidentified small cetaceans were self-reported to have been killed by AK Cook Inlet set-net fishing gear. This record represents 1 of 2.	DEAD	Entangled / entrapped	Fishery gear	AK Cook Inlet salmon set gillnet	Commercial	Gillnet	N/A	1	1
MMAF	8/9/2017	SCAK	Unidentified Small Cetacean	Unknown	DEAD	Two unidentified small cetaceans were self-reported to have been killed by AK Cook Inlet set-net fishing gear. This record represents 2 of 2.	DEAD	Entangled / entrapped	Fishery gear	AK Cook Inlet salmon set gillnet	Commercial	Gillnet	N/A	1	1
AKRO	6/15/2016	GOA	Unidentified Whale	Unknown	PRORATE	A vessel struck an unidentified cetacean while underway at 20 knots. The vessel was less than 65 ft long. Blood was observed in the water and the whale was reported to appear dazed prior to disappearing from sight. This interaction qualifies as a prorated serious injury under criterion L6b due to the vessel's size and speed and L11 due to the resulting laceration.	PRORATE	Ship strike	Vessel (commercial)	N/A	N/A	N/A	L11	0.52	0
AKRO	6/17/2016	GOA	Unidentified Whale	Unknown	PRORATE	An unidentified whale was observed during an aerial survey that was trailing netting, 120+ feet of line, and a polyball. This entanglement will be considered a prorated serious injury under criterion L10 due to the unknown configuration of the entanglement.	PRORATE	Entangled / entrapped	Fishery gear	Unknown net	Unknown	Net	L10	0.75	0

Appendix Table 1.1 -- Human-marine mammal interaction records reviewed for injury and mortality, 2015-2019.

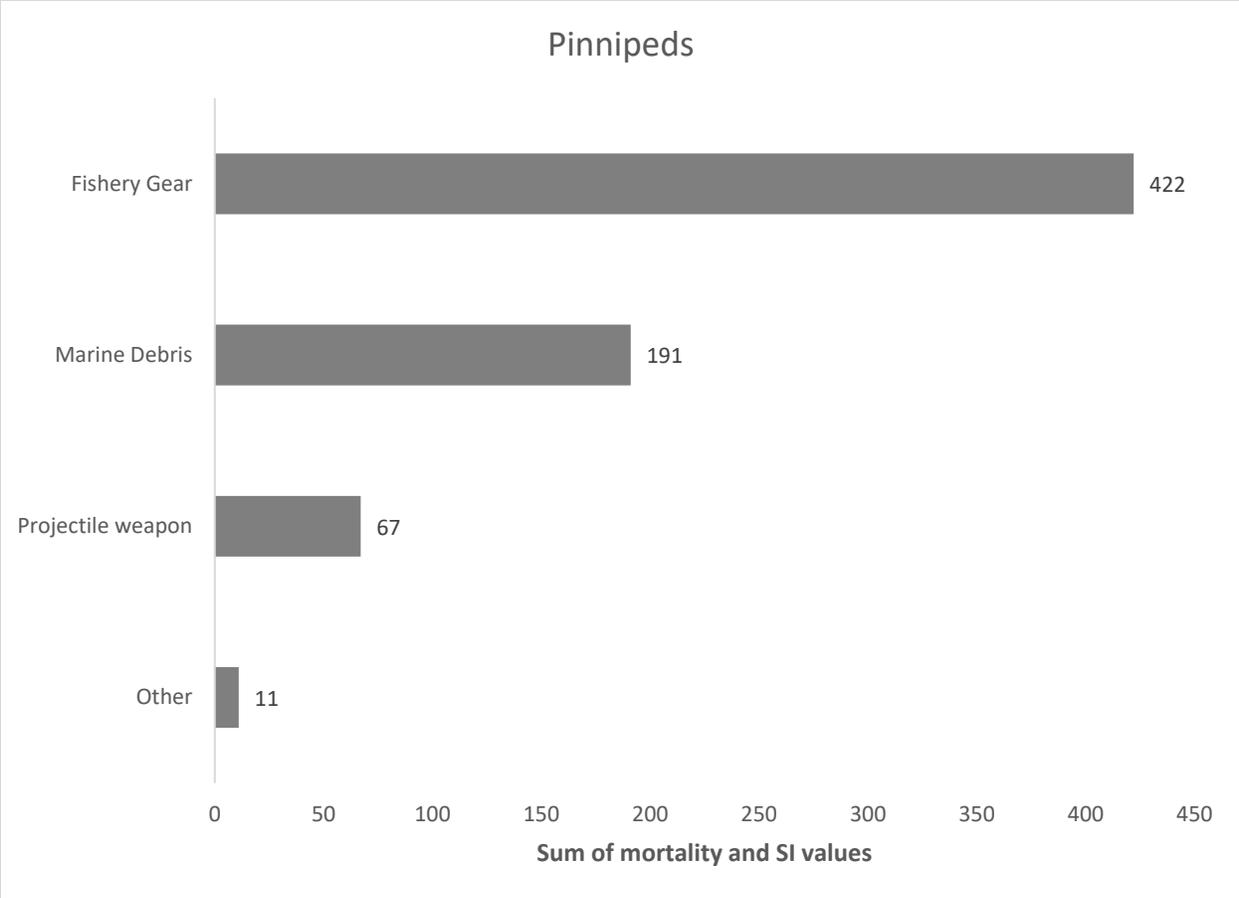
AKRO	9/14/2016	SEAK	Unidentified Whale	Unknown	PRORATE	An unidentified large whale, described as over 65 ft in length, was observed for over a week to be entangled in gear consisting of a line and a buoy in an unknown configuration near Prince of Wales Island. This entanglement will be considered a prorated serious injury under criterion L10 due to the unknown configuration of the entanglement.	PRORATE	Entangled / entrapped	Marine debris (unidentified)	N/A	N/A	N/A	L10	0.75	0
AKRO	3/18/2017	SEAK	Unidentified Whale	Unknown	PRORATE	A small humpback whale or minke whale was observed with a trailing buoy. The extent of the entanglement could not be confirmed; thus, this event is prorated at L10.	PRORATE	Entangled / entrapped	Marine debris (rope and buoy)	N/A	N/A	N/A	L10	0.75	0
AKRO	5/12/2017	SEAK	Unidentified Whale	Unknown	SI	The bow of a 959.6 ft cruise ship traveling at 20.5 knots struck an unidentified whale. The crew of the ship briefly saw the whale dead ahead of the vessel but were unable to maneuver in time to avoid impact. The ship shuddered when the whale was hit. The outcome of the impact is unknown.	SI	Ship strike	Vessel (commercial)	N/A	N/A	N/A	L6a	1	0
NPGOP	6/21/2017	BS	Unidentified Whale	Unknown	PRORATE	A fishery observer in the vessel's wheelhouse reported hearing a loud bang and, after looking behind the boat, saw a large pool of blood (~20-30 feet in diameter). The observer and vessel captain assumed a whale collided with the vessel's propeller based on the amount of blood observed. No whales were seen before or after the collision. This interaction is assigned to category L11 based on the observation of blood in the water without further details on the injury.	PRORATE	Ship strike	Vessel (commercial)	AK BSAI flatfish trawl	Commercial	Trawl	L11	0.52	0.52
AKRO	10/11/2017	SEAK	Unidentified Whale	Unknown	PRORATE	An unidentified whale was observed to be towing a 16 inch red buoy, possibly associated with shrimp pots. The whale appeared to be smaller and traveling alone and slow. No additional information or photographs are available. The extent of the entanglement could not be determined; thus, this case is prorated at L10.	PRORATE	Entangled / entrapped	Fishery gear	Unknown	Unknown	Unknown	L10	0.75	0
AKRO	12/6/2017	BS	Unidentified Whale	Unknown	SI	An unidentified whale was observed to be entangled in parallel pot cod fishery gear. The entangled gear included 1 beach-ball sized polybuoy with 50 ft of 3/4 inch line, a second beach-ball sized polybuoy with 66 fathoms of line, and one pot (weight ~ 600-700 lb, 6.5 ft x 6.5 ft x 36 inches tall). The base of the whale's tail was wrapped 3-5 times in the main line under the second buoy, but no other areas appeared to be wrapped. The whale and fishery gear were not re-sighted after the initial discovery.	SI	Constricting entanglement	Fishery gear	AK State-managed Pacific cod pot (parallel fishery)	Commercial	Pot	L2	1	1



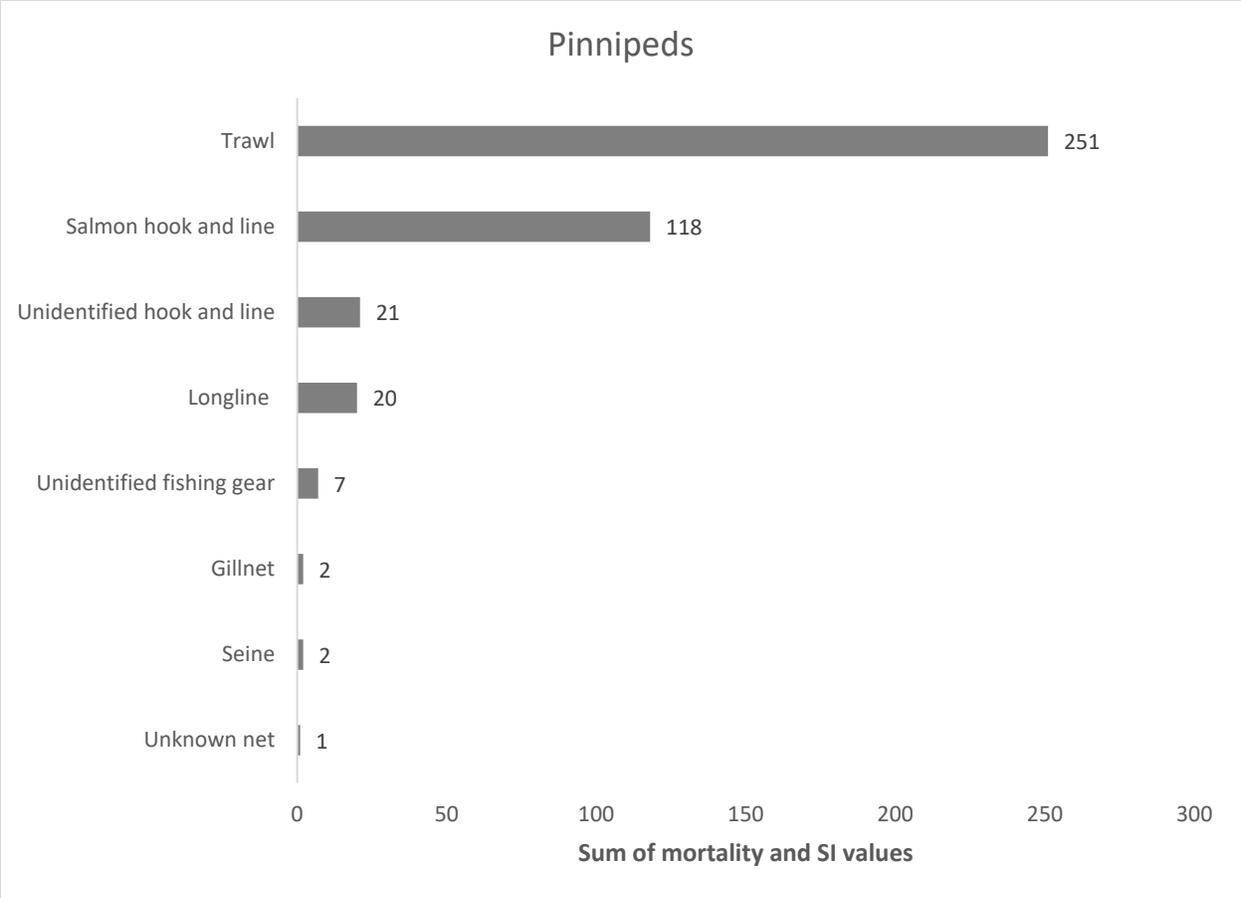
**Appendix Figure 1.1** -- Total human-caused serious injury and mortality of Alaska marine mammal species appearing in the Alaska Stock Assessment Reports, 2015-2019. Some large whale injury categories are prorated (i.e., assigned a serious injury value less than one), so the sum of mortality, SI, and SI prorate values may not be a whole number. See the text of the report for more information.



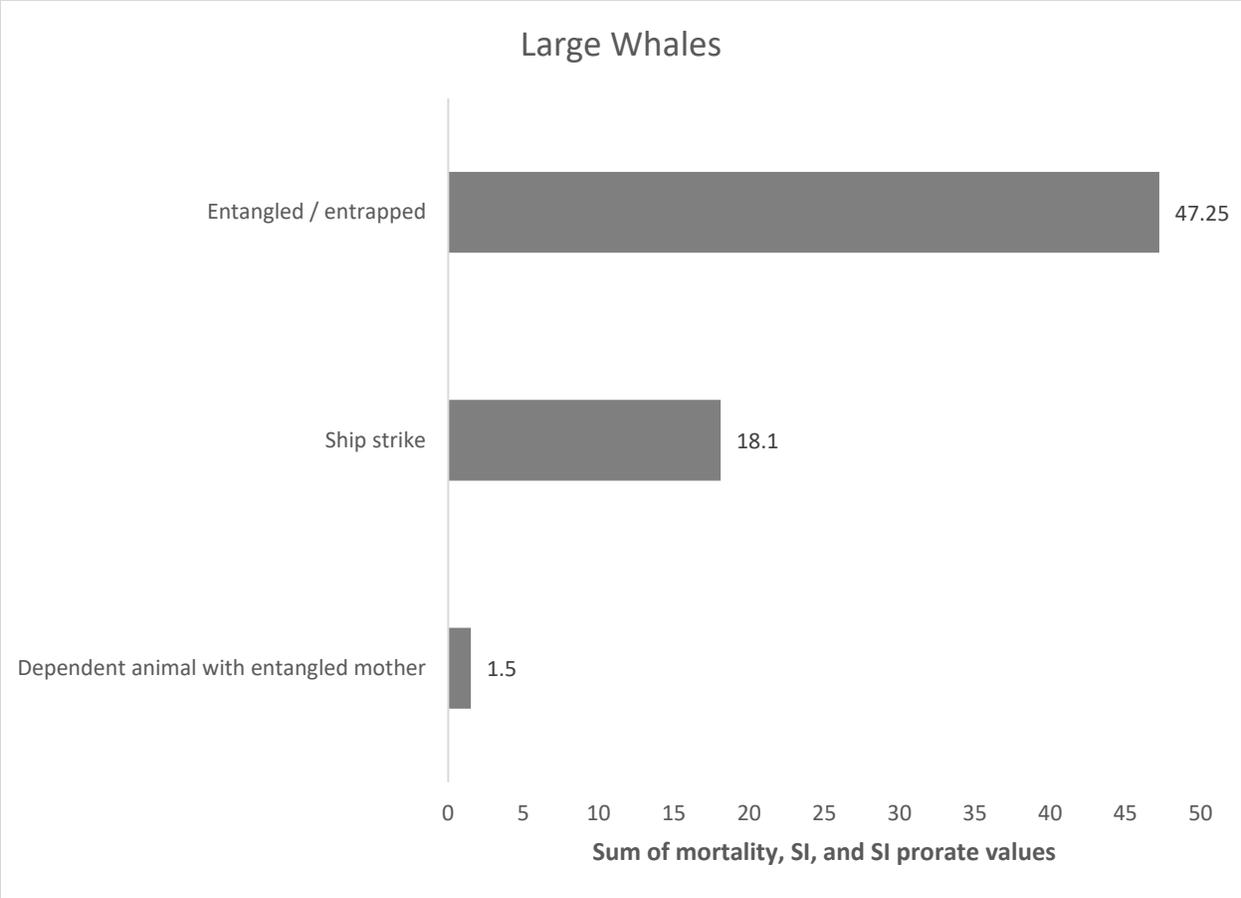
**Appendix Figure 1.2** -- Human-caused serious injury and mortality of Alaska pinniped species by mechanism of injury, 2015-2019. Dependent animals with seriously injured mothers are included in the “other” category, regardless of the mechanism of injury of their mothers.



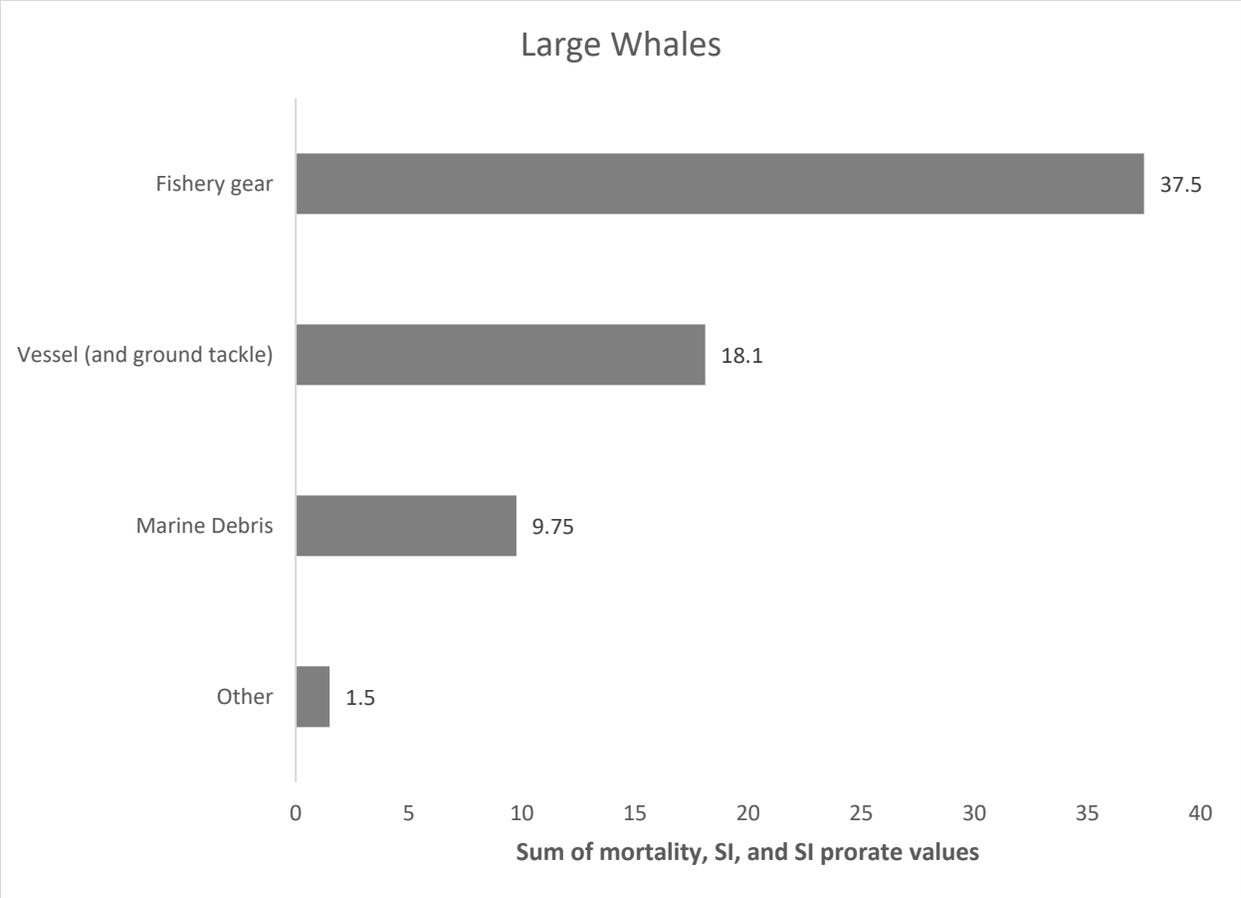
**Appendix Figure 1.3** -- Human-caused serious injury and mortality of Alaska pinniped species by general cause of injury, 2015-2019. Dependent animals with seriously injured mothers are assigned the same cause of injury as their mothers.



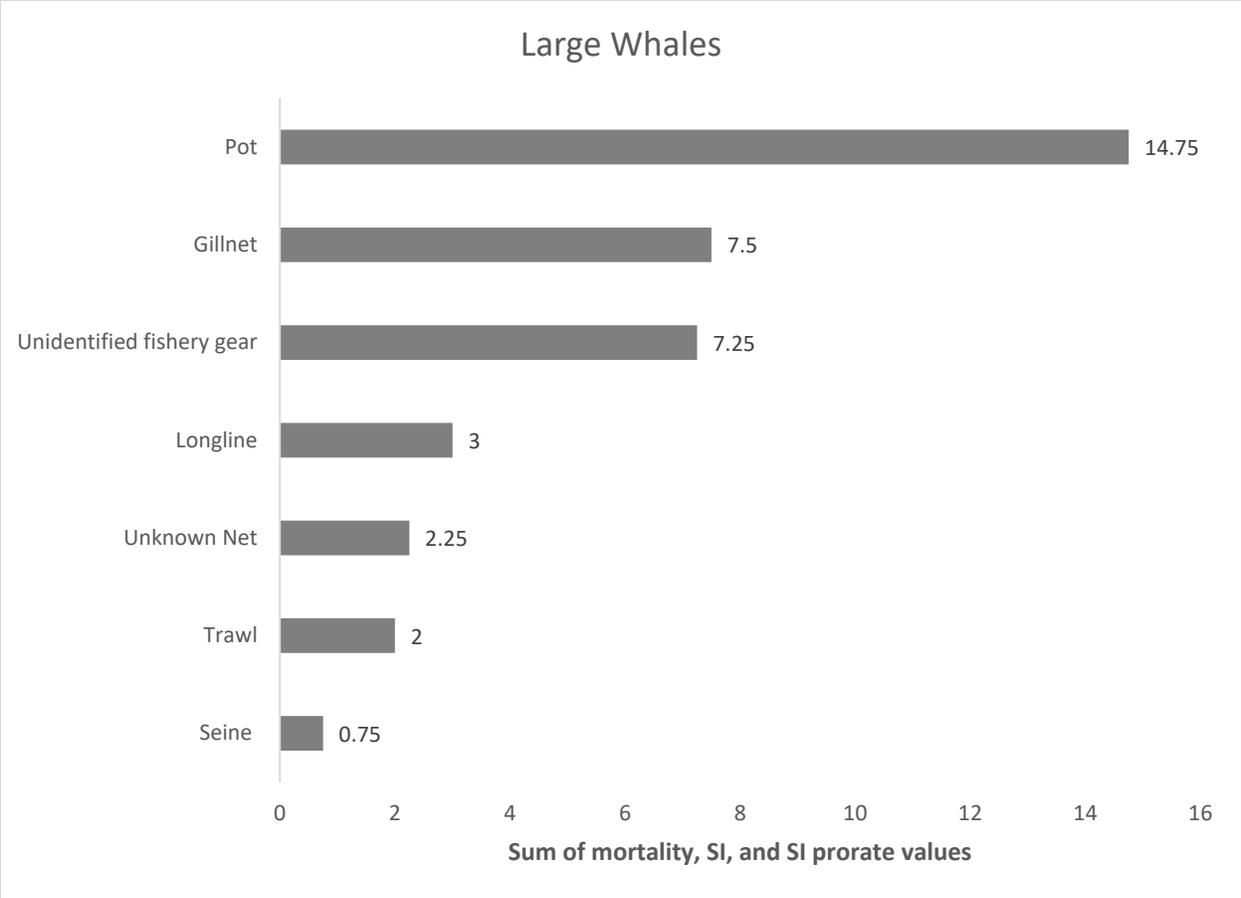
**Appendix Figure 1.4** -- Fishery-related serious injury and mortality (fishery gear as the cause of injury) of Alaska pinniped species by fishery gear type, 2015-2019.



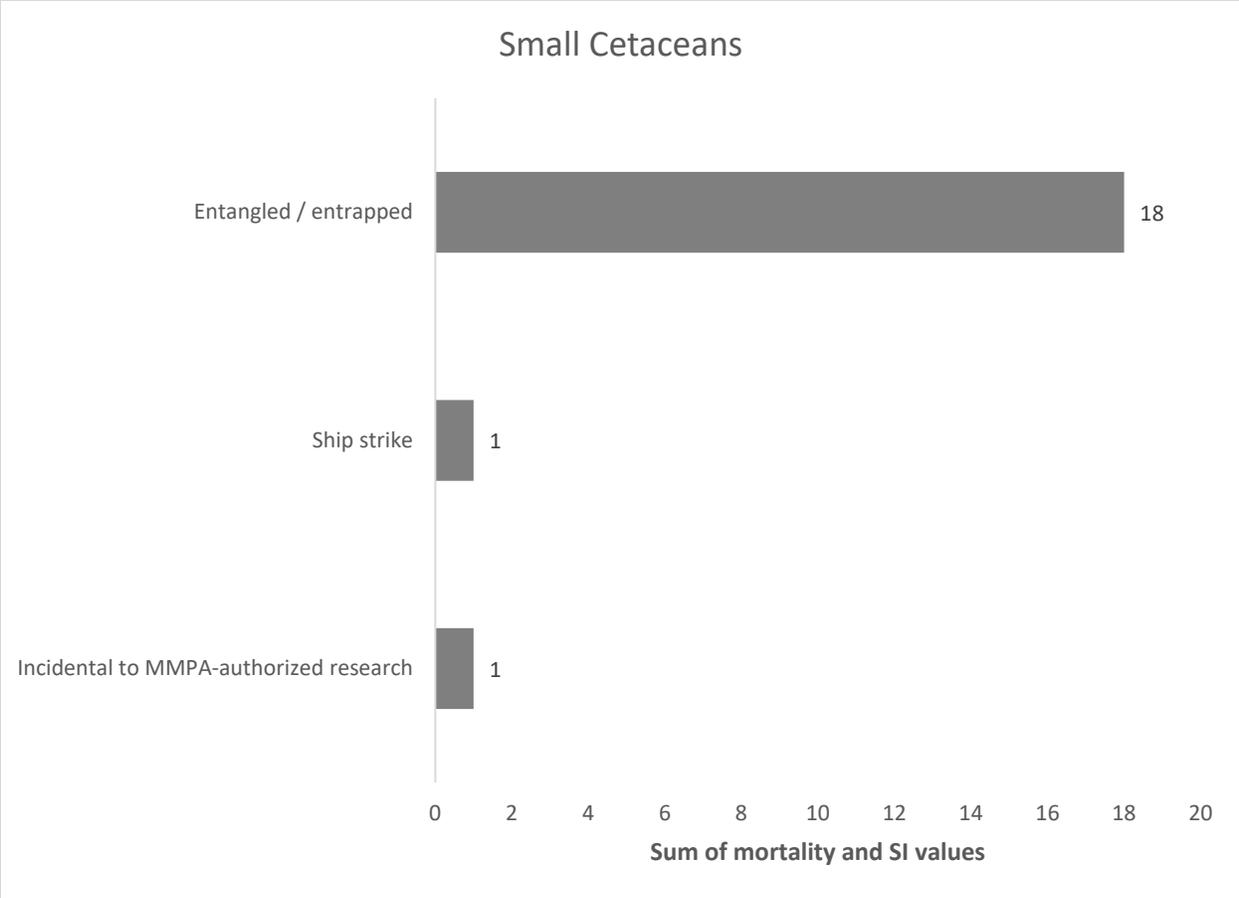
**Appendix Figure 1.5** -- Human-caused serious injury and mortality of Alaska large whale species by mechanism of injury, 2015-2019. Some large whale injury categories are prorated (i.e., assigned a serious injury value less than one), so the sum of mortality, SI, and SI prorate values may not be a whole number. See the text of the report for more information.



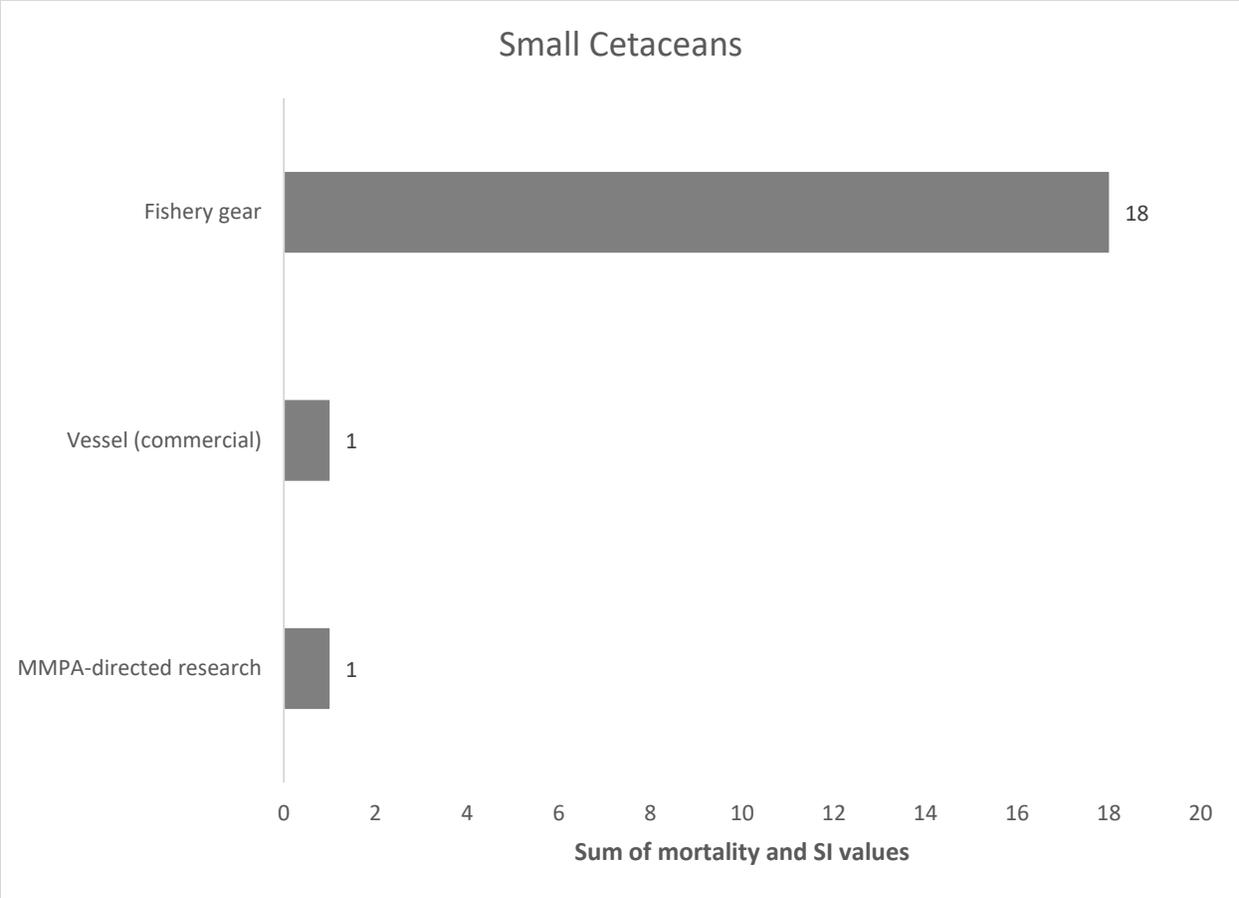
**Appendix Figure 1.6** -- Human-caused serious injury and mortality of Alaska large whale species by general cause of injury, 2015-2019. Dependent animals with seriously injured mothers are assigned the same cause of injury as their mothers. Some large whale injury categories are prorated (i.e., assigned a serious injury value less than one), so the sum of mortality, SI, and SI prorate values may not be a whole number. See the text of the report for more information.



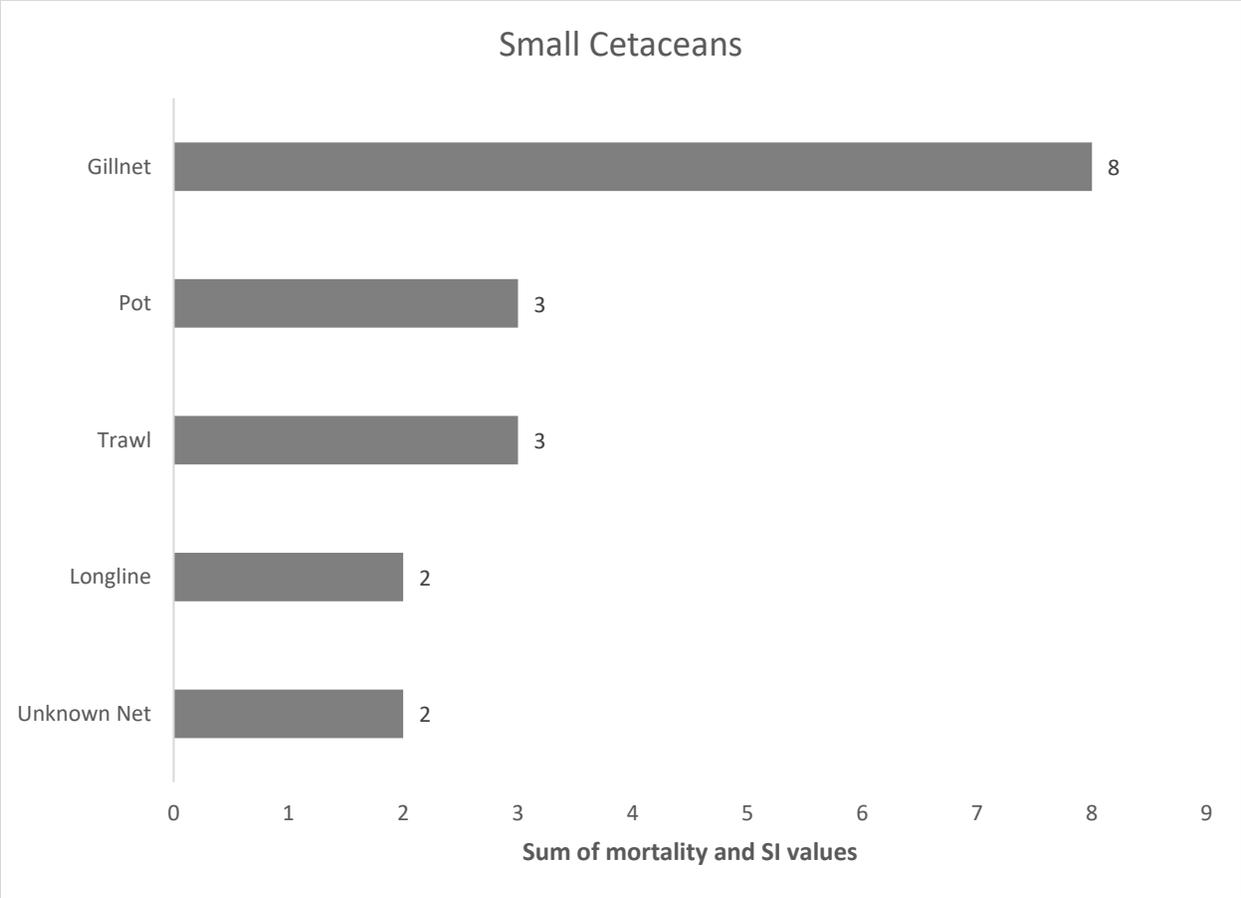
**Appendix Figure 1.7** -- Fishery-related serious injury and mortality (fishery gear as the cause of injury) of Alaska large whale species by fishery gear type, 2015-2019. Some large whale injury categories are prorated (i.e., assigned a serious injury value less than one), so the sum of mortality, SI, and SI prorate values may not be a whole number. See the text of the report for more information.



**Appendix Figure 1.8** -- Human-caused serious injury and mortality of Alaska small cetacean species by mechanism of injury, 2015-2019.



**Appendix Figure 1.9** -- Human-caused serious injury and mortality of Alaska small cetacean species by general cause of injury, 2015-2019.



**Appendix Figure 1.10** -- Fishery-related serious injury and mortality (fishery gear as the cause of injury) of Alaska small cetacean species by fishery gear type, 2015-2019.

## **Appendix 2**

Appendix Tables 2.1-2.3 summarize the large cetacean, small cetacean, and pinniped injury categories and criteria, which are copied from tables 1-3 in the guidelines for “Distinguishing Serious from Non-Serious Injury of Marine Mammals” pursuant to the Marine Mammal Protection Act (NMFS 2012b). (Available online: <https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-protection-act-policies-guidance-and-regulations>).

Appendix Table 2.1: Summary of Large Cetacean Injury Categories and Criteria.

Appendix Table 2.2: Summary of Small Cetacean Injury Categories and Criteria.

Appendix Table 2.3: Summary of Pinniped Injury Categories and Criteria.



**Appendix Table 2.1: Summary of Large Cetacean<sup>1</sup> Injury Categories and Criteria**

Instructions: Each large cetacean injury event is recorded to the appropriate injury/information category using all available information and scientific judgment, as described in the Procedural Directive. Criteria L10 - L12 accommodate events that lack details necessary for assignment to a more specific category. For a single injury event to which several categories apply, the injury determination with the highest level of severity is assigned. More detailed information or extended observation on an individual case/animal may justify a determination differing from the guidance of this table. An animal that is fully disentangled would generally be considered not seriously injured, unless there is additional evidence of a serious injury. Any injury leading to apparent significant health decline (e.g., skin discoloration, lesions near the nares, fat loss, increased cyamid loads) is a serious injury.

Category	Injury/ Information	Injury Determination	Criteria
L1	Ingested gear <sup>2</sup> or hook(s)	SI <sup>3</sup>	Swallowed, not simply draped through mouth
L2	Constricting wrap	SI	Tightly wrapped line anywhere on body that indents the skin or does not shift with whale's movement, or line that is likely to become constricting as the whale grows. Indication that a whale that is heavily weighted, anchored or has a discolored appendage is sufficient evidence of constricting gear
L3	Loose wrap, bridled or draped gear	NSI <sup>4</sup>	Loosely wrapped gear that moves or shifts freely with whale's movement. Absence of constricting gear must be confirmed
L4	External hook	NSI	Fishing hook of any size on any part of the body (i.e., not ingested)
L5a	Deep laceration <sup>5</sup>	SI	Laceration with the potential to affect major artery (e.g., laceration or severing at insertion of flipper/fluke), penetrating body cavity, or cutting bone
L5b	Superficial laceration	NSI	Laceration not deeper than blubber layer, does not affect major artery, or cut bone
L6a	Vessel much greater in size than whale or vessel 2'65' and >10 knots	SI	Struck by vessel much greater in size than the whale and traveling greater than 10 knots, or struck by vessel equal or greater than 65' and traveling greater than 10 knots, and no information on injury to the whale
L6b	Vessel smaller in size than whale or vessel <65' and >10 knots	Prorate <sup>6</sup> : 0.20	Struck by vessel smaller in size than the whale and traveling greater than 10 knots, or struck by vessel less than 65' and traveling greater than 10 knots, and no information on injury to the whale. A strike to a calf by a vessel of any size and traveling greater than 10 knots will be considered a serious injury

<sup>1</sup> For the purposes of this table, "large cetaceans" include all mysticetes and sperm whales.

<sup>2</sup> For the purposes of this table, "gear" is defined as any portion of fishing gear excluding the hook, which is considered separately.

<sup>3</sup> SI = Serious Injury.

<sup>4</sup> NSI = Non-Serious Injury.

<sup>5</sup> For the purposes of this table, "laceration" is defined as a ragged incision or a tearing of the skin. Lacerations are caused by trauma that results in stretching, tearing, crushing, shearing, or avulsion of the tissue. Trauma, including blunt and sharp force trauma, includes a wound or bodily harm caused by an extrinsic agent.

<sup>6</sup> "Prorate" means the number of events assigned to a given category within the assessment period is multiplied by the prorate number provided for that category.

**Appendix Table 2.1. -- Continued.**

L6c	Vessel any size 10 knots	NSI	Struck by vessel of any size traveling at equal or less than 10 knots and no information on injury to the whale
L7a	Vessel much greater in size than whale or vessel 2'65' and speed unknown	Prorate: 0.56	Struck by vessel much greater in size than the whale traveling at an unknown speed, or struck by vessel equal or greater than 65' and traveling at unknown speed, and no information on injury to the whale. A strike to a calf by a vessel of any size when speed is unknown will be considered a serious injury
L7b	Vessel smaller in size than whale or vessel <65' and speed unknown	Prorate: 0.14	Struck by vessel smaller than the whale traveling at an unknown speed, or struck by vessel less than 65' and traveling at unknown speed, and no information on injury to the whale. A strike to a calf by a vessel of any size when speed is unknown will be considered a serious injury
L8	Dependent <sup>7</sup>	SI	Dependent calf of a dead or seriously injured mother
L9	Brought on deck	SI	Whale removed from water and brought on deck
L10	Evidence of entanglement	Prorate: 0.75	Confirmed entanglement but insufficient information available to place in any of the L1-L4 criteria with a high degree of certainty
L11	Vessel strike laceration	Prorate: 0.52	Whale confirmed with non-entanglement related laceration but lacking details to place in either criteria L5a or L5b with a high degree of certainty. Includes observation of blood in water
L12	Vessel strike observed	Prorate: 0.36	Confirmed vessel strike report where there is insufficient detail to assign event to criteria L6a – L7b with a high degree of certainty. A strike to a calf by a vessel of unknown size traveling at an unknown speed will be considered a serious injury

<sup>7</sup> “Dependent” for a large cetacean means a non-weaned calf. Weaned calves and juvenile large cetaceans are no longer dependent on their mothers.

**Appendix Table 2.2. -- Summary of Small Cetacean<sup>1</sup> Injury Categories and Criteria**

Instructions: Each small cetacean injury event is recorded to the appropriate injury/information category using all available information and scientific judgment, as described in the Procedural Directive. For a single injury event to which several categories apply, the injury determination with the highest level of severity is assigned. More detailed information or extended observation on an individual case/animal may justify a determination differing from the guidance of this table. Any injury leading to apparent significant health decline (e.g., skin discoloration, fat loss) is a serious injury.			
Category	Injury/Information	Injury Determination <sup>2</sup>	Additional factors for evaluating whether “case-specific” injuries are serious or non-serious (additional factors at end of table)
S1	A free-swimming animal observed at a date later than its human interaction, exhibiting signs of declining health believed to be resulting from initial injury (e.g., a marked skin discoloration, fat loss)	SI <sup>3</sup>	*
S2	Ingested gear <sup>4</sup> or hook(s)	SI	
S3	Visible blood loss	Case specific <sup>5</sup>	Amount of blood, location of the bleeding injury, duration of bleeding
S4	Animal brought on vessel deck following entanglement/entrapment (excluding scientific research targeting marine mammals and authorized as such under a NMFS scientific research permit, where the animal is brought on and placed on the vessel deck in a controlled manner)	SI	
S5a	Hook(s) in head (excluding criterion S5b), regardless of the presence of gear	SI	
S5b	Hook(s) confirmed in lip only, external tissue outside of teeth, no trailing gear	Case specific	Prolonged restraint or struggle that could lead to capture myopathy, size of hook, depth of hooking, impairing ability to feed, presence of other injuries
S5c	Hook(s) in any body part, but hook(s) is removed or pulls out	Case specific	Prolonged restraint or struggle that could lead to capture myopathy, depth of hook, hook pulls out cleanly vs. causes further injury during dehooking, method used to remove hook, length of time hooked
S5d	Hook(s) in appendage or body (excluding criterion S5a), without trailing gear or with trailing gear that does not have the potential <sup>6</sup> to: 1) become a constricting wrap on animal; 2) be ingested; 3) accumulate drag; or 4) become snagged on something in the environment, anchoring the animal	Case specific	Prolonged restraint or struggle that could lead to capture myopathy, depth and location of hook, type and amount of gear attached

<sup>1</sup>For the purposes of this table, small cetaceans include all odontocetes except sperm whales.

<sup>2</sup>This table includes only those criteria determined to be serious injuries or case-specific based on expert opinion at the 2007 Workshop (Anderson et al., 2008) and by small cetacean experts on the NMFS Determination Staff working group. For the purposes of streamlining the information for the reader, criteria determined to be non-serious injuries are not included in this table.

<sup>3</sup>SI = serious injury.

<sup>4</sup>For the purposes of this table, gear is defined as any portion of fishing gear excluding the hook, which is considered separately. Lures are considered gear. Gear also generally refers to any type of debris entangling or attached to the animal.

<sup>5</sup>Case-specific = Could be a serious or non-serious injury, but either 1) there is insufficient information about the impact of a particular injury, or 2) additional factors must be considered on a case-by-case basis to determine the severity.

<sup>6</sup>For the purposes of this table, "potential" as it relates to criterion S5d indicates that the trailing gear IS NOT capable of leading to any of the situations listed.

**Appendix Table 2.2. -- Continued.**

S6	Gear attached to free-swimming animal with potential <sup>7</sup> to: 1) become a constricting wrap on animal; 2) be ingested; 3) accumulate drag; or 4) become snagged on something in the environment, anchoring the animal	SI	
S7a	Anchored, immobilized, or entrapped and not freed	SI	
S7b	Anchored, immobilized, entangled, or entrapped before being freed without gear attached	Case specific	Duration of entanglement/entrapment, prolonged restraint or struggle that could lead to capture myopathy, gear type, where/how gear is attached to animal, associated injury (i.e., where directly or indirectly caused by initial entanglement), response of individual animal, method used by human to remove gear from animal
S8a	Gear wrapped and constricting on any body part or is likely to become constricting as the animal moves or grows	SI	
S8b	Gear wrapped and loose on any body part	Case specific	Gear type, amount of gear, potential for snag, potential to lead to criterion S8a, animal body size relative to gear (e.g., because of species or age), effect on animal movement, species sensitivity (e.g., frightens easily)
S9	Body trauma <sup>8</sup> not covered by any other criteria	Case specific	Location of wound, depth (e.g., superficial or to the bone, penetrating muscle or organs), length, number of lacerations, cleanliness (i.e., compression vs. tearing)
S10	Visible fracture(s), excluding pectoral fins (see criterion S13d for pectoral fin fractures)	SI	
S11	Vertebral transection, including fully severed flukes	SI	
S12	Body cavity penetration <sup>9</sup> by foreign object or body cavity exposure	SI	
S13a	Loss or disfigurement of dorsal fin	Case specific	Cleanliness (i.e., compression vs. tearing), nature of injury causing the loss, extent of fin loss (i.e., full or partial), amount and duration of blood loss
S13b	Partially severed flukes, transecting midline	SI	

<sup>7</sup> For the purposes of this table, potential as it relates criterion S6 indicates that the trailing gear IS capable of leading to any of the situations listed.

<sup>8</sup> For the purposes of this table, “trauma” is defined as a wound or bodily harm caused by an extrinsic agent. Blunt trauma is an injury (abrasion, laceration, contusion or skeletal fracture) produced by a blunt object striking the body or impact of the body against a blunt object or surface. Sharp force trauma is an injury caused by a sharp or pointed object creating a penetrating (stab, chop or incision) wound. Laceration is defined as a ragged incision or a tearing of the skin. Lacerations are caused by blunt trauma that results in stretching, tearing, crushing, shearing, or avulsion of the tissue.

<sup>9</sup> For the purposes of this table, “penetration” is defined as a wound occurring when a foreign object punctures the body. Penetrating wounds can be characterized as one of three types: stab (small external wound that is greater in length into the body than is apparent on the skin surface), incised (clean cuts into the skin which are longer on the skin surface than they are deep), or chop wounds (incised wounds that penetrate deep to the bone, leaving a groove or cut in the bone).

**Appendix Table 2.2. -- Continued.**

S13c	Partially severed flukes, not transecting midline	Case specific	Cleanliness (i.e., compression vs. tearing), nature of injury causing the loss, amount and duration of blood loss
S13d	Partially or completely severed or fractured pectoral fin(s)	Case specific	Cleanliness (i.e., compression vs. tearing), nature of injury causing the loss, extent of fin loss (i.e., full or partial), amount and duration of blood loss, opened or closed fracture
S14	Social animal separated from group and/or released alone post-interaction (excluding criterion S15)	Case specific	Species (e.g., sensitivity, offshore vs. inshore), location of release (e.g., likelihood of animal locating its conspecifics)
S15	Dependent animal (i.e., calf, juvenile) released alone post-interaction or dependent animal left with a seriously injured or dead mother	SI	
S16	Observed or reported collision with vessel	Case specific	Speed of vessel, size of vessel, hull shape, part of vessel to strike the animal, size of animal compared to size of vessel, behavior of animal after collision, extent and location of wound(s) on animal

\* Factors listed in the far right column of Appendix Table 2-2 are unique to the associated injury type. In addition to those listed in this column, the factors that should be considered, if available, when reviewing all case specific injury events in this table include, but are not limited to the following:

- Species
- Age or age class (e.g., calf, juvenile, adult)
- Sex
- Size of animal
- Overall health (e.g., nutritional status, body condition, pre-existing disease state, pre-existing injuries)
- Behavior during and/or after injury-causing interaction (e.g., dorsal arching, listlessness)
- Reproductive status (e.g., pregnant, lactating, has dependant calf)
- Natural history (e.g., indigenous, migratory)
- Location of injury (e.g., mouth, head, body, fin, tail, internal)
- Size of injury
- Duration of injury (e.g., single event, repeated, chronic)
- Depth of injury (e.g., superficial or to the bone, penetrating muscle or organs)
- Cleanliness of injury (e.g., compression, tearing)
- Environmental condition (e.g., individuals out of their normal habitat, climate stressors)
- Social stressors (e.g., social structure of species, separation of social individuals from the group, cow/calf separation)
- Cumulative effects of repeated exposures
- Compounding effects of multiple injuries obtained during a single event
- Availability of data on multiple sequential events involving the same individual over time
- Susceptibility of the species to capture myopathy (spinner dolphins and porpoises notoriously sensitive; bottlenose dolphins robust; many others fall in between, with some unknown)
- Ability of rehabilitated animal to be released
- Relative effect of blood loss on different species

In addition to those factors listed above, the factors that apply to all fishery-interaction related case specific injuries include, but are not limited to the following:

- Entanglement type (e.g., hooked, anchored, entrapment)
- Amount and size of gear (e.g., size, length and number of branches of line; number of buoys, traps or anchors; volume of netting)
- Entanglement constriction (e.g., tight, loose, multiple wraps)
- Habitat where animal is located (e.g., an animal with trailing gear areas of dense gear or an area with vegetation is more likely to risk snagging the gear and becoming anchored)
- Entanglement duration
- Existence, type and amount of any trailing gear
- Method of handling the animal during disentanglement

**Appendix Table 2.3. -- Summary of Pinniped<sup>t</sup> Injury Categories and Criteria**

Instructions: Each pinniped injury event is recorded to the appropriate injury/information category using all available information and scientific judgment, as described in the Procedural Directive. For a single injury event to which several categories apply, the injury determination with the highest level of severity is assigned. More detailed information or extended observation on an individual case/animal may justify a determination differing from the guidance of this table. Any injury leading to apparent significant health decline (e.g., skin discoloration, fat loss) is a serious injury.			
<b>Category</b>	<b>Injury/Information</b>	<b>Injury Determination<sup>2</sup></b>	<b>Additional factors for evaluating whether “case-specific” injuries are serious or non-serious (additional factors at end of table)</b>
P1	A free-swimming animal observed at a date later than its human interaction, exhibiting signs of declining health believed to be resulting from initial injury (e.g., a marked change in body condition, tissue necrosis, emaciation, gangrene).	SI <sup>3</sup>	
P2	Ingested gear <sup>4</sup> or hook(s)	SI	
P3	Visible blood loss	Case specific <sup>5</sup>	Amount of blood, location of the bleeding injury, duration of bleeding
P4	Animal brought on vessel deck following entanglement/entrapment (excluding scientific research targeting marine mammals and authorized as such under a NMFS scientific research permit, where the animal is brought on and placed on the vessel deck in a controlled manner)	Case specific	Manner in which animal is brought on deck, length of time animal is on deck, environmental conditions (e.g., temperature)
P5a	Hook(s) in mouth (excluding criterion P5b), regardless of the presence of gear	SI	
P5b	Hook(s) confirmed in head (excluding criterion P5a), or in lip only (external tissue outside of teeth), no trailing gear	Case specific	Location on head (e.g., eye), depth of penetration, type of hook, prolonged restraint or struggle that could lead to capture myopathy, size of hook, impairing ability to feed
P5c	Hook(s) in any body part, but hook(s) is removed or pulls out	Case specific	Prolonged restraint or struggle that could lead to capture myopathy, location of hooking on the body, depth of hook, hook pulls out cleanly vs. causes further injury during dehooking, method used to remove hook, length of time hooked

<sup>1</sup>For the purposes of this table, pinnipeds include all pinniped species except walrus.

<sup>2</sup>This table includes only those criteria determined to be serious injuries or case-specific based on expert opinion at the 2007 Workshop (Anderson et al., 2008) and by pinniped experts on the NMFS Determination Staff working group. For the purposes of streamlining the information for the reader, criteria determined to be non-serious injuries are not included in this table.

<sup>3</sup>SI = serious injury.

<sup>4</sup>For the purposes of this table, gear is defined as any portion of fishing gear excluding the hook, which is considered separately. Lures are considered gear. Gear also generally refers to any type of debris entangling or attached to the animal.

<sup>5</sup>Case-specific = Could be a serious or non-serious injury, but either 1) there is insufficient information about the impact of a particular injury, or 2) additional factors must be considered on a case-by-case basis to determine the severity.

**Appendix Table 2.3. -- Continued.**

P5d	Hook(s) in appendage or body (excluding criteria P5a-c and P12), without trailing gear or with trailing gear that does not have the potential <sup>6</sup> to: 1) become a constricting wrap on animal; 2) be ingested, 3) accumulate drag; or 4) become snagged on something in the environment, anchoring the animal	NSI <sup>7</sup>	
P6	Gear attached in any manner to free-swimming animal with potential <sup>8</sup> to: 1) become a constricting wrap on animal; 2) be ingested; 3) accumulate drag; or 4) become snagged on something in the environment, anchoring the animal	SI	
P7a	Anchored/immobilized and not freed	SI	
P7b	Anchored, immobilized, or entangled before being freed without gear attached	Case specific	Duration of entanglement, prolonged restraint or struggle that could lead to capture myopathy, type of fishing gear, where/how gear immobilized animal, associated injury (where directly or indirectly caused by initial entanglement), response of individual
P8a	Gear wrapped and constricting any body part or likely to become constricting as the animal moves or grows	SI	
P8b	Gear wrapped loosely on any body part	Case specific	Type and amount of fishing gear, animal body size relative to gear (species, age), effect on movement, species sensitivity
P9	Body trauma <sup>9</sup> not covered by any other criteria	Case specific	Location of trauma on body, depth (superficial or to the bone, penetrating muscle or organs) length of laceration(s), number of lacerations, cleanliness (compression vs. tearing), amount and duration of blood loss, risk of infection or disease transmission (e.g., dog bites)
P10	Visible fracture(s), excluding broken appendages (see criterion P13 for broken appendages)	SI	
P11	Vertebral transection or fully severed flipper(s)	SI	
P12	Body cavity penetration <sup>10</sup> by foreign object or body cavity exposure	SI	

<sup>6</sup> For the purposes of this table, potential as it relates to criterion P5d indicates that the trailing gear IS NOT capable of leading to any of the situations listed.

<sup>7</sup> NSI = non-serious injury.

<sup>8</sup> For the purposes of this table, potential as it relates to criterion P6 indicates that the trailing gear IS capable of leading to any of the situations listed.

<sup>9</sup> For the purposes of this table, “trauma” is defined as a wound or bodily harm caused by an extrinsic agent. Blunt trauma is an injury (abrasion, laceration, contusion or skeletal fracture) produced by a blunt object striking the body or impact of the body against a blunt object or surface. Sharp force trauma is an injury caused by a sharp or pointed object or a bullet from a gunshot creating a penetrating (stab, chop or incision) wound. Laceration is defined as a ragged incision or a tearing of the skin. Lacerations are caused by blunt trauma that results in stretching, tearing, crushing, shearing, or avulsion of the tissue.

<sup>10</sup> For the purposes of this table, “penetration” is defined as a wound occurring when a foreign object punctures the body, such as a bullet from a gunshot. Penetrating wounds can be characterized as one of three types: stab (small external wound that is greater in length into the body than is apparent on the skin surface), incised (clean cuts into the skin which are longer on the skin surface than they are deep), or chop wounds (incised wounds that penetrate deep to the bone, leaving a groove or cut in the bone).

**Appendix Table 2.3. -- Continued.**

P13	Partially severed or fractured flipper(s)	Case specific	Cleanliness (clean cut vs. tear), nature of injury causing the loss, extent of fin or flipper loss, opened or closed fracture, dislocation, amount/duration of blood loss
P14	Dependent animal (i.e., pup, juvenile) released alone post-interaction or dependent animal left with a seriously injured or dead mother	SI	
P15	Observed or reported collision with vessel	Case specific	Speed of vessel, size of vessel, hull shape, part of vessel to strike the animal (e.g., propeller, hull), size of animal compared to size of vessel, location of strike on animal's body, extent and location of wound(s) to animal

\* Factors listed in the far right column of Appendix Table 2-3 are unique to the associated injury type. In addition to those listed in this column, the factors that should be considered, if available, when reviewing all case specific injury events in this table include, but are not limited to the following:

- |  |  |   |
|--|--|---|
| - Species  | - Size of injury   | - Cumulative effects of repeated exposures  |
| - Age or age class (e.g., calf, juvenile, adult)   | - Duration of injury (e.g., single event, repeated, chronic)   | - Compounding effects of multiple injuries obtained during a single event                         |
| - Sex  | - Depth of injury (e.g., superficial or to the bone, penetrating muscle or organs)   | - Availability of data on multiple sequential events involving the same individual over time      |
| - Size of animal   | - Cleanliness of injury (e.g., compression, tearing)   | - Susceptibility of the species to capture myopathy (some sensitive, others robust, some unknown) |
| - Overall health (e.g., nutritional status, body condition, pre-existing disease state, pre-existing injuries) | - Environmental condition (e.g., individuals out of their normal habitat, environmental stressors)                             | - Ability of rehabilitated animal to be released  |
| - Behavior during and/or after injury-causing interaction (e.g., listlessness)                                 | - Social stressors (e.g., social structure of species, separation of social individuals from the group, mother/pup separation) | - Relative effect of blood loss on different species  |
| - Reproductive status (e.g., pregnant, lactating, has dependant pup)   |  |   |
| - Natural history (e.g., small home range, large home range)   |  |   |
| - Location of injury (e.g., mouth, head, body, flipper/fin, internal)  |  |   |

In addition to those factors listed above, the factors that apply to all fishery or marine-debris interaction related case specific injuries include, but are not limited to the following:

- |  |   |   |
|--|---|---|
| - Entanglement type (e.g., hooked, anchored, entrapment)   | - Entanglement constriction (e.g., tight, loose, multiple wraps)  | - Entanglement duration                           |
| - Amount and size of gear (e.g., size, length and number of lines; number of buoys, traps or anchors; volume of netting; material of gear) | - Habitat where animal is located (e.g., an animal with trailing gear in areas of dense gear or an area with vegetation or on shore is more likely to risk snagging the gear and becoming anchored) | - Existence, type and amount of any trailing gear |
| - Method of handling the animal during disentanglement   |   |   |



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